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ICONES ORCHIDACEARUM

Fascicle 11

THE GENUS EPIDENDRUM

Part 7

"Species New & Old in Epidendrum"

Eric Hágsater

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ICONES ORCHIDACEARUM

Fascicle 11, plates 1101 to 1200

THE GENUS *EPIDENDRUM*
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Reference Map

TROPICAL AMERICA
(numbers refer to the portions of the map used in individual plates)



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Species New & Old in *Epidendrum*

Foreword

With this seventh installment of The Genus *Epidendrum*, 20 new species are presented and a new name proposed. In preparation of our contribution to Flora Mesoamericana, which by the latest count includes 334 species in the genus *Epidendrum,* numerous Mesoamerican species have been included. For many of them, lectotypes or neotypes are designated for either the recognized name or some of the taxonomic synonyms.

As in other volumes, many species which had not been previously illustrated are included here. It is interesting to note that the only species where we have not been able to find any material to illustrate is *Epidendrum warszcewiczii* Rchb.f.; the illustration provided is based on Reichenbach's original drawing.

Several of the new species here proposed are South American, from Peru and an interesting addition from Brazil, *Epidendrum strobilicaule*, belonging to the Physinga group and which has rupiculous plants, with the base of the stems thickened and progressively attenuate, a rare feature in the genus.

A new species is proposed for the western Mexican populations previously comprised in *E. ciliare: Epidendrum cilioccidentale* ranging from Chiapas to Sinaloa. An additional new species was recently proposed for a part of the populations of the Lesser Antilles and northern South America: *Epidendrum megalemmum* Carnevali & G.A.Romero, a hitherto well know entity, illustrated since the XVIII Century, but always confused with *Epidendrum ciliare*.

Epidendrum dentilobum is an interesting case of a rare but widespread species, previously thought to be endemic to Panama, and which has also been found in the French Guyana and Brazil, and is illustrated here.

The following note is found throughout the text: "The Vienna Code, (Art. 37.4) does not permit the use of illustrations as type of a name of a new species after 1 January 2007. However the lectotypifications refer to a previously validly published new species, so the code does not apply." We thank Gustavo A. Romero and Kanchi Gandhi for extensive discussions on the matter. Unfortunately when the Berlin Herbarium was destroyed, most of the Schlechter holotypes were lost. In spite of the Vienna Code, which would make the designation of neotypes preferable, and that it could be argued that a tracing of an original specimen is not part of the original material the author had at hand when describing the species, we feel that it does represent the concept of the species better than any other collection. (See Romero & Gerlach, in press, Lankesteriana, for an extensive discussion of the subject).

Finally, we frequently use the term clonotype, for specimens prepared from the same cultivated plant used to prepare the holotype at different times; though the concept is not accepted in the code, we still think such material is useful, and should be recognized. This should not be confused with the custom of some early collectors who used the same number to identify different plants of what they presumed to be the same species, sometimes collected at different times and different localities.

We wish to thank Dr. Jerzy Rzedowski for the translation of the Latin prognoses.

Eric Hágsater
Mexico City, November, 2008

OTHER SPECIMENS: HONDURAS: Cortés: Santa Cruz de Yojoa, 2000 ft, 23 VIII 1933, *Edwards 502*, AMES! Rio Lindo, 2200 ft, 15 IX 1933, *Edwards 552*, AMES! Lake Yojoa, 2100 m, 30 VII 1934, *Yunker 4861*, AMES! **Atlántida:** La Fragua Swamp near Tela, 1 III 1923, *Ames s.n.*, AMES! Lancetilla Valley, near Tela, 20-600 m, 16 XII 1927, *Standley 54599*, AMES x2! **Yoro:** Progreso, Rio Pelo, 8 III 1923, *Ames s.n.*, AMES! **Olancho:** Catacamas, 400 m, 26 IV 1957, *Molina 8315*, F! **Comayagua:** Minas de Oro Rancho Grande, San Luis, 4000 ft, 15 V 1932, *Edwards 152*, AMES! Pito Solo, 2000 ft, 13 VIII 1932, *Edwards 223*, AMES x2! Minas de Oro San Luis, 2500 ft, 5 V 1933, *Edwards 412*, AMES! Rio Frio, La Libertad, 3000 ft, 7 VII 1933, *Edwards 446*, AMES! **NICARAGUA: Zelaya [Atlántico Sur]:** Río Blanco to Río Copalar, 200-400 m, 13 II 1979, *Douglas 12067*, MO! **Río San Juan:** La Palma 818, 40-60 m, 14 II 1985, *Douglas 23555*, MO! **COSTA RICA:** without locality, 30 VI 1921, *Lankester 192-20*, K! **Guanacaste:** Hojancha, Monterromo, Reserva Cerro Alto, 9 IV 1998, *Loria s.n.*, USJ! Quebrada Grande, Tilarán, ca. 650 m, 27 I 1926, *Standley 46094*, AMES! US! Nicoya, 1 IV 1933, *Valerio 531*, CR! **Alajuela:** San Mateo, 400-500 m, 12 IV 1922, *Brenes 539(244)*, CR! San Mateo, *Endres 26*, W x4! San Carlos Aguas Zarcas, 1 IV 1923, *Jiménez 2063*, AMES! La Palma de San Ramón, 29 I 1928, *Brenes 2718(64)*, CR! Calera de San Ramón, 29 I 1932, *Brenes 15027*, NY! **Limón:** Parque Nacional de Cahuita, 15 IV 1978, *Gomez 3636*, USJ! Cocles, Talamanca, 100-150 m, 12 X 1977, *Ocampo 2213*, CR! La Colombiana, ca. 70 m, 6 III 1924, *Standley 36926*, AMES! US! **Puntarenas:** Jalaca, Golfo Dulce Area, 100 ft, 25 III 1949, *Allen 5209*, US! Golfito de Golfo Dulce, 0 m, 4 VI 1949, *Allen 5296*, US! Golfito , Jiménez, 100 m, 18 I 1991, *Cordero 105*, MO! P. N. Corcovado, 0-150 m, 13 II 1988, *Kernan 145*, CR! Boruca, 730 m, 16 I 1943, *León 1059*, CR! P. N. Corcovado, 10 m, 6 II 1989, *Merz 137*, CR! Laura, 100 m, 12 IV 1978, *Todzia 222*, CR! Buenos Aires Reserva Indigena Ujarra, Rio Ceiba, 500 m, 24 X 1979, *Todzia 506*, CR! **San José:** El General, 640 m, 1 V 1939, *Skutch 4309*, AMES! **Cartago:** Pejivalle, 14 V 1924, *Lankester 859*, AMES! **PANAMA: Bocas del Toro:** Isla Colon, 1 IV 1940, *Wedel 87*, MO! Bastimentos Isl., Chiriqui Lagoon, 6 XI 1941, *Wedell 2921*, AMES! MO! US! **Chiriquí:** Cerro Punta, 5 III 1967, *Cochrane 8380*, WIS! Cerro Punta, 5 III 1967, *Sawyer s.n.*, WIS x2! **Veraguas:** La Yeguada San Juan, 0 m, 1 IV 1923, *Powell 3349*, AMES! **Colón:** Gamboa Frijoles, 0 m, 1 III 1923, *Powell 3366*, AMES x3! **Panamá:** Cerro Campana, ca. 1000 m, 21 IV 1941, *Allen 2452*, AMES! Cerro Campana, Capira, 800 m, 18 I 1947, *Allen 4028*, G! Ibid. 14 II 1947, *Allen 4239*, G! Canal Zone, 22 VI 1972, *Croat 17143*, MO! Barro Colorado Island, 14 VIII 1970, *Croat 11830A*, MO! Panama City, 0 m, 1 I 1938, *Kieswetter s.n.*, AMES! Canal Zone, 29 XII 1918, *Powell 40*, AMES! K! MO! Lino Hill, 4000-4500 ft, *Powell 299*, AMES! Barro Colorado Island, ca. 120 m, 18 XI 1925, *Standley 40903*, US! Ibid. 2 XI 1931, *Shattuck 542*, MO! Barro Colorado Island, 25 II 1932, *Woodworth 66A*, AMES! **CUBA: Holguín:** Monte verde, 1 VI 1859, *Wright 628*, AMES! **Guantánamo:** Oriente, El Yunque, Baracoa, 1300-1700 ft, 12 VII 1955, Schultes 488, AMES! Oriente, 1 VI 1856, *Wright 628*, AMES x2! G! **JAMAICA:** Without locality, 6 IV 1906, *Cameron s.n.*, AMES x2! Ibid. 200 ft, *Nichols 1281*, K! MO! Mocho Mts., 2000 ft, 26 VI 1960, *Adams 7288*, M! UWI! Manchester Colonies, 2300 ft, 4 IV 1962, *Adams 11019*, UWI! Moncagne, 1 IV 1903, *Alexander s.n.*, K! Dolphin Head, 17 III 1908, *Britton 2243*, NY! Manchester, 3 IX 1908, *Britton 3154*, NY! Mandeville, 15 II 1910, *Brown 206*, NY! Clarendon, 2400 ft, 6 VII 1977, *Goodfriend s.n.*, FLAS x2! Mandeville, 26 IV 1910, *Crawford 641*, NY! Mandeville, 26 IV 1910, *Crawford 669*, NY! Trelawny, 1800-2000 ft, 15 VII 1963, *Crosby 741*, AMES! Cascade, 2500 ft, 2 IV 1900, *Harris 77*, BM! Ibid. 1000 m, 26 IV 1901, *Harris 8121*, NY! Ibid. 3000 ft, 26 IV 1900, *Harris 9021*, BM! Mt. Diablo, 2800 m, 29 VIII 1905, *Harris 10428*, BM! Lydford, 1500 ft, 20 XII 1953, *Howard 13454*, AMES! Lydford, 20 XII 1954, *Howard 13960*, AMES! IJ! NY! Trelawney, 26 IX 1954, *Howard 14132*, AMES! U! Moneaque, 8 III 1936, *Hunnewell s.n.*, AMES x2! Cuna Gap, 600-725 m, 13 VI 1926, *Maxon 9174*, AMES! BM! NY! Bath, 200 ft, 31 VII 1903, *Nichols s.n.*, MO! Ibid. *Nichols 172*, AMES! NY! Near Hoy, 2000 ft, 3 IV 1917, *Perkins 1432*, AMES! Retford Pen, ca. 2400 ft, 10 IV 1955, *Powell 95*, IJ! Guys Hill, 1600 ft, 3 V 1952, *Proctor 6655*, IJ! Troy, 2250 ft, 24 V 1951, *Proctor 8008*, IJ! Morgans River, 2000-2500 ft, 7 I 1964, *Proctor 24436*, IJ! McNie, ca. 2100 ft, 7 V 1965, *Proctor 26397*, AMES! IJ! Lluidas Vale, ca. 1650 ft, 21 XI 1970, *Proctor 31520*, IJ! Troy, 8 II 1961, *Renz 9900*, RENZ! Mt. Diabelo, 1 II 1916, *Ridley s.n.*, K! Quick Step, 14 VII 1976, *Whitefoord 1367*, BM! IJ! Bethany, 1 IX 1847, *Wolle s.n.*, CM! **HAITI:** . Milot, P. N. Citadelle, 750-800 m, *Dod 1214*, Herb. DOD x3! Massif de La Hotte Camp, Perrín; Carretera a Jeremié; 1 km antes del vado de Riviére Glace, 800 m, *Dod 1839*, Herb. DOD x3! Dép. du Sud, prope Constant Tete de Boef, ca. 1100 m, 5 IX 1917, *Ekman H 779*, S! Bassin Paval de Bouvierd, 300 m, *Ekman 7613*, K! S! Massif de La Pelle,, 1300 m, *Ekman 7657*, S! Morne des Commissaries, 1450 m, 1 V 1942, *Holdridge 1175*, AMES! Mornes des Commissaries, 1500 m, 13 XII 1944, *Holdridge 2054*, AMES! Riviare Clear, 750 m, 5 VIII 1945, *Holdridge 2106*, AMES! NY! Marmelade,, ca. 800 m, 20 XII 1925, *Leonard 8300*, AMES! NY! US! Nord Dondon, 400 m, 6 I 1926, *Leonard 8548*, CM! Emmery, 325-900 m, *Leonard 9000*, AMES! UC! US! Marmelade, 2250 ft, 4 VIII 1905, *Nash 1377*, NY! Savanas Zombria, 19 VIII 1939, *Pride 7*, AMES! Savane Zombis, 19 VII 1939, *Pride 110*, GH! Duchity, ca. 600 m, 11 III 1983, Zanoni 25646, NY! **DOMINICAN REPUBLIC:** San Francisco de Macoris, 400-1000 m, 5 IV 1922, *Abbott 401*, AMES! Loma La Hant, ca. 600-1300 m, 26 II 1922, *Abbott 1872*, AMES! US! San Francisco de Macorís, 400-1000 m, 5 IV 1922, *Abbot 2101*, AMES! Ibid. *Abbott 2113*, AMES! Samana Peninsula, 100-500 m, 12 V 1922, *Abbott 2367*, AMES! Jovero, 0 m, 1 II 1923, *Abbott 2565A*, AMES! US! Sierra Martin Garcia, 950 m, 10 III 1985, *Ackerman 2081*, UPRRP! Loma Campana, ca. 1036 m, 1 I 1948, *Allard 18274*, US! El Siebo, 200 m, 14 VI 1988, *Croat 68490*, MO! Loma de Toro, 1180 m, Dod 769, Herb. DOD! (flowers in spirit AMO!) Navarrete, Dod 1180, Herb. DOD! (flowers in spirit) Filipinas, 1000-1100 m, *Dod 1388*, Herb. DOD! La Leonor, 500-750 m, *Dod 1468*, Herb. DOD! (flowers in spirit AMO!) Siberia, 1740 m, *Dod 1616*, Herb. DOD x2! (flowers in spirit AMO!) Concesión Alcoa; *Dod 1625*, Herb. DOD! (flowers in spirit AMO!) Puerto Plata, 950 m, *Dod 1719*, Herb. DOD! (flowers in spirit AMO!) Cordillera Central, La Cumbre, ca. 300 m, *Ekman 12426*, S! Santo Domingo-Santiago, ca. 300-400 m, 17 VIII 1967, *Gastony 715*, NY! Jaiqui Picao, 1 VII 1954, *Jiménez 2676*, US! Constanza, 1250 m, 1 V 1910, *Krug 3177*, AMES! Yuna river, 28 II1963, *Lavastre 768*, NY! Cordillera de Yaroa, 800-850 m, 28 VI 1968, *Liogier 11901*, NY! Altagracia 120-130 m, 14 V 1980, *Mejía 6326*, NY! Saint Domingue, 1 I 1802, *Poiteau s.n.*, G! P. N. Los Haitises, 0-10 m, *Thompson 10282*, CM! Jicomé, 500-600 m, 14 V 1931, *valeur 633*, K! MO! Pedernales, 3600 ft, 17 II 1982, *Zanoni 19097*, MO! NY! Estrelleta,, 790 m, 4 III 1982, *Zanoni 19612*, MO! NY! **PUERTO RICO:** Radley, 28 VI 1983, *Acevedo 386*, SJ! Río Grande Luquillo Mts., Quebrada Grande, 750 m, 21 VIII 1982, *Ackerman 1697*, UPRRP! Maricao Forest Reserve, 400-600 m, 14 I 1984, *Ackerman 1892*, UPRRP! Monte Jiménez , 460 m, 5 II 1984, *Ackerman 1921*, UPRRP! Verde, Quebrada Sonadora, 250-290 m, 7 II 1985, *Ackerman 2071*, UPRRP! El Verde, Río Sonadora, 450-550 m, 29 XI 1985, *Ackerman 2194*, UPRRP! Maricao Forest Reserve, 720-750 m, 21 II 1986, *Ackerman 2224*, UPRRP! Maricao Forest Reserve, 680 m, 25 III 1989, *Ackerman 2573*, UPRRP! Maricao, Forest Reserve, ca. 700-760 m, 8 II 1992, *Axelrod 3949*, NY! UPRRP! El Verde, 24 VI 1965, *Bannister 20*, MO! Alto de la Bandera, near Adjuntas, 14 III 1913, *Britton 2127*, NY! Maricao to Monte Alegrillo, 650-750 m, 3 IV 1913, *Britton 2553*, NY! Monte Montoso, 13 II 1915, *Britton 4124*, NY! Maricao, 850 m, 19 II 1915, *Britton 4518*, NY! Barranquitos, 19 III 1915, *Britton 5575*, NY! Hato Tejas, ca. 100 m, 28 VIII 1966, *Byer 66-888*, UPRRP! Arecibe, 1 II 1887, *Eggers 6341*, M! Luquillo Mts, 22 III 1966, *Evans 63*, AMES! Luquillo Mts., 13 IV 1899, *Heller 1095*, NY! Maricao, 2500 ft, 10 I 1939, *Hom 5866*, AMES! Río Grande, 333 m, 30 IV 1989, *García 29*, UPRRP! Río Sonadora, 270 m, 5 VII 1993, *Hágsater 11413*, AMO! Lares, 16 II 1887, *Krug 6217*, MEXU! Adjuntas, 2 V 1886, *Lintenis E360*, BR! Maricao, 800 m, 27 XII 1963, *Liogier 10444*, NY! Maricao, 650-670 m, 19 XI 1988, *Melendez 189*, UPRRP! El Verde, 700 m, 18 IX 1982, *Parrilla 5*, UPRRP! Luquillo Mts., 17.5 km, 11 VIII 1966, *Powell 1707*, AMES! Bayamón,

Barrio Guaraguao Arriba, upper slopes & summit of Cerro La Peña, 500-552 m, 12 III 1987, *Proctor 43179*, SJ! Montedero, 200-240 m, 15 IV 1989, *Proctor 45513*, SJ! Cidra, 700 m, 11 XII 1960, *Renz 9956*, RENZ! Sierra de Naguabo, 24 VII 1914, *Shafer 3451*, NY! Adjuntas, 11 V 1886, *Sintenis 4360*, AMES! BM! K! W! Monte Alegrillo, 23 XI 1884, *Sintesis 513*, W! Montis Sombrero, 13 IX 1886, *Sintesis 5039*, L! Sierra de Gares, Guajataca, 3 II 1887, *Sintesis 6131*, G! LE! NY! Santana, Saldgre, 14 IV 1943, *Velez 1872*, AMES! Florida, 1 II 1963, *Wagner 108*, AMES! **BRITISH VIRGIN ISLANDS:** Gorda Peak National Park, 1200-1359 ft, 19 VII 1986, *Proctor 41965*, SJ! **NETHERLANDS ANTILLES:** Saba Weg Windwardside, 19 VIII 1947, *Arnoldo 683*, U! Ibid., 29 VIII 1947, *Arnoldo 924*, U! St. Eustatius Top of the Quill, 400 m, 4 VI 1906, Boldingh *250 B*, U! Ibid. 450 m, 6 VI 1906, *Boldingh 381 B*, U! Hellsgate, 13 VIII 1906, *Boldingh 1666 B*, U! Saba Crispeen, 400 m, 14 VII 1906, *Boldingh 1763 B*, U! Dutch W Ind. Island, 1 I 1908, *Boldingh 1818*, NY! Saba Springbaygut, 21 VII 1906, *Boldingh 2090 B*, U! Saba Springbaygut, 21 VII 1906, *Boldingh 2108*, U! St. Martin Milldrumhill, 300-400 m, 4 IX 1906, *Boldingh 3149 B*, U! St. Martin, 6 VI 1921, *Boldingh 3583 B*, U! Saba Between Bottom and Crispen, 27 IV 1953, *Stoffers 3043*, U! Saba Near Saddle, 7 VIII 1953, Stoffers 4123, U! Saba, Antillen, ca. 200 m, 27 IV 1880, *Suringar s.n.*, W! Saba Mountain, 23 IV 1885, *Suringar s.n.*, L x2! Saba, Masticgut, 27 IV 1885, *Suringar s.n.*, L! Saba, Wellridge en Wellgut, 27 IV 1885, *Suringar s.n.*, L! **ST. KITTS–NEVIS:** Anguilla, Lawherst State, 8 IX 1901, *Britton 668*, NY! **ANTIGUA:** Sugar Leaf Mtn., 1 V 1937, *Box 770*, BM! Boggy Peak, 1200 ft, 30 V 1937, *Box 813*, BM! US! Hills above Blubber Valley, 4 II 1913, *Rose 3482*, NY! US! Boggy Peak, Shekerley Mountains, 200-400 m, 2 IV 1956, *Smith 10403*, AMES! IJ! NY! UC! **MONTSERRAT:** Gagr's, 23 I 1907, *Shafer 164*, CM! NY US! Soufriere, 23 I 1907, *Shafer 171*, NY! US! **GUADELOUPE:** Without locality, 1 I 1854, *Duchassaing s.n.*, BM! Ibid. 1 IV 1843, *L'Herminier 78*, P! Coansa, 17 VII 1940, *Questel W15*, P! La Soufrière, *Duss 3486*, NY! US! La Soufrière , ca. 1100 m, 15 V 1969, *Renz 10374*, RENZ! **DOMINICA:** Lisdara, 457 m, 27 APR 1937, *Hodge 375*, AMES! NY! Sylvania Estate, 549 m, 9 VIII 1939, *Hodge 376*, AMES! Chiltern Estate, 500 m, 27 II 1940, *Hodge 1553*, AMES! Roseag Valley Waterfalls (below Laudat), ca. 550 m, 12 III 1940, *Hodge 1995*, AMES! Morne Gay, 400 m, 23 III 1940, *Hodge 2218*, AMES! Lisdara, 457 m, 27 III 1946, *Hodge 2343*, AMES! Morne Diablotin, ca. 1000 m, 14 IV 1940, *Hodge 2847*, AMES! Deux Branches, Concorde Valley, 19 IV 1940, *Hodge 3113*, AMES! La Chaudière, ca. 100 m, 10 V 1940, *Hodge 3537*, AMES! La Chaudière, ca. 100 m, 10 V 1940, *Hodge 3602*, AMES! NY! La Chaudière, ca. 100 m, 10 V 1940, *Hodge 3669*, AMES! Point Suichella, 17 V 1888, *Ramage s.n.*, K! Ibid. Laion Flats, 18 VI 1888, *Ramage s.n.*, BM! **MARTINIQUE:** Without locality, *Plez s.n.*, P! St. Pierre, 1 XI 1867, *Hahn 99*, G! P! Bois Inférieur de Carbet, 700 m, 19 IV 1939, *Stehlé 3561*, P! **ST. LUCIA:** Piton Flore, 300-1000 ft, 4 IV 1958, *Proctor 17615*, AMES! **ST. VINCENT:** Without locality, 1000 ft, *Smith 623*, BM! Monte Andrews, 1 XII 1889, *Eggers 6668*, P! S! Soufrière Mtn., 3700 ft, 12 II 1962, *Cooley 8373*, AMES! Londewad, 1000 ft, *Smith 1149*, NY! **GRENADA:** St. George's Annandale, 1 II 1906, *Broadway s.n.*, AMES x2! BM! NY! St. John Near Belvidere, 18 I 1951, *Hunnewell 19457*, AMES! Grand Etang, 1800 ft, 20 III 1924, *Miller 169*, US! **TRINIDAD & TOBAGO:** Trinidad, 1 XII 1845, *Broadford 5315*, BM! Trinidad, Maraval, 3 IV 1911, *Broadway 3941*, AMES! Maraval, 8 IV 1911, *Broadway 3971*, AMES! NY! K x2! US! Trinidad, Heights of Maraval, 8 III 1911, *Broadway 4345*, Z! Trinidad, Saut d'Eau, 8 III 1931, *Broadway 9501*, AMES! El Tucuche, 27 III 1955, *Downs 43*, AMES! **GUYANA:** Pomeroon River, 14 I 1923, *De la Cruz 2999*, AMES! F! MO! UC! SURINAM: Without locality, *Hostmann 576a*, S!

OTHER RECORDS: COSTA RICA: San José: San Isidro Del Alto de San Juan, 12 III 1983, *Hágsater 7088*, flowers in spirit AMO! **JAMAICA:** Without locality, *Hágsater 11229*, (flowers in spirit AMO! Illustration) Photograph by Vivian Thompson, in Orchids of Jamaica, page 59. **HAITI:** Without locality, hort. Zelenko, New York, *Hágsater 11148*, (flowers in spirit AMO! Illustration voucher AMO!) l'Artibonite Vicinity of Ennery, 325-900 m, *Leonard 9000*, flowers in spirit AMO! **GUADALOUPE:** Photo prise en Guadeloupe par Mr. Beauduceau, 1 VII 1987, slide AMO! Photo by Feldmann, in Atlas des Orchidées Sauvages de la Guadaloupe, pg. 57. **SURINAME:** Photo by R. Reteig, in Orchids of Surinam, page 127 as *Epidendrum secundum*. **FRENCH GUIANA:** *Feuillet 15129*, photo by Carol Gracie, in Guide to the Vascular Plants of Central French Guiana, Part 1, Pteridophytes, Gymnosperms and Monocotyledons. Plate LVI (c).

EPIDENDRUM ANGUSTILOBUM Fawc. & Rendle — Plate 1102

OTHER SPECIMENS: COSTA RICA: Guanacaste: Cuatro Bocas Parque Nacional Guanacaste Estación Pitilla, 9 al S de Santa Cecilia, La Paz, 700-1000 m, 6 III 1991, *Moraga 312*, INB! **Cartago:** El Empalme, I II 1988, *Mora de Retana s.n.*, USJ! Carretera Interamericana Sur, km 39, *Mora de Retana s.n.*, USJ! **PANAMA: Coclé:** Without locality, 1500 ft, 13 XII 1980, *Systma 2437*, MO! El Valle de Antón, Loma del Tigre, region north of El Valle, 1000 m, 26 XII 1946, *Allen 3924*, MO! Vicinity Valle de Antón, La Mesa, 860 m, 7 VII 1994, *Croat 76706*, MO! **CUBA:** Oriente, Sierra Nipe, *Acuña 1149*, HAC! Oriente, Gran Piedra, Sierra Maestra, 1 VII 1949, *Alain 6720*, AMES! **Holguín:** Oriente, Prope villam Monte Verde dictam, I I 1859, *Wright 1490*, AMES! **Guantánamo:** San Antonio del Sur, puriales de cauyeri, sierra del Purial, cerca del arroyo, 800 m, 30 V 1982, *Bisse 47374*, HAJB! Maricao, 1 VIII 1938, *Hon 5891*, AMES! Pico del Oeste, Sierra de Luquillo, 1020 m, 25 VII 1966, *Howard 16180*, AMES! Oriente, Camp. La Gloria, S of Sierra Moa, 24 XII 1910, *Shafer 8074*, AMES! **DOMINICAN REPUBLIC: Santiago Rodríguez:** Cordillera Septentrional, Partiendo del poblado Piché, hasta el firme Diego Ocampo, *Dod 859*, Herb. Dod! Cordillera Central; Yaguate, carretera a la presa de Valdesia, frente a la Loma Rodríguez, *Dod 1687*, Herb. Dod! Cordillera Central; Jarabacoa, carretera a Constanza, puente sobre el río Baguate, *Dod 2043*, Herb. Dod! **Samana:** Peninsula de Samana, Laguna, Los Bañaderos, Prietos, *Ekman 15154*, S! **Barahona:** Montiada Nueva, SE of Polo, 3500 ft, 21 August 1946, *Howard 8564*, AMES! Cordillera de Yaroa, near the trail to Arroyo del Toro, *Lioger 11871B*, AMES! MEXU! NY! US x2! **La Vega:** Loma Casabito, arroyo 11.4 km West of Bonao, 4100 ft, 13 XII 1986, MO! Reserva Cientifica Ebano Verde, Loma Alto Casabito, *Thompson 11233*, CM! Ibid. *Thompson 11267*, CM! Cordillera Central, en el valle lateral del arroyo La Sal, sureste del poblado de La Sal, entre Loma La Sal y Loma La Golondrina, 14 IV 1982, *Zanoni 20041*, MO! **Puerto Plata-Santiago limite:** Cordillera Septentrional, Loma Diego de O'Campo, 15 aero-kilometros Noreste de la Ciudad de Santiago, en la cima, 1249 m, 4 III 1983, *Zanoni 25592*, AMO! **HAITI:** Massif du Nord, Bayeux, Morne Brigand, on top of the mountain, *Ekman 2976*, K! S! Massif du Nord: St. Louis du Nord, Morne Baron, top of mountain, *Ekman 4658*, S! (Illustration voucher) Plaisance to Marmelade, *Nash 657*, NY! **PUERTO RICO:** Patillas-San Lorenzo Reserva Forestal Carite, near Cerro La Santa, Rd 184 Km 21.7-22.6, along ridges, ca. 850 m, 5 I 1984, *Ackerman 1882*, UPRRP! Ponce, Toro Negro forest reserve, trail along Río Inaubon (from Rt 143, km 18.5), 1200-1240 m, 17 I 1992, *Axelrod 3781*, UPRRP! Sierra de Naguabo, Rie Prieto and adjacent hills, 690-1035 m, 10 VIII 1914, *Shafer 3614*, A! F! Pr. Cayey, in monte "Torito", 867 m, 12 X 1885, *Sintenis 2104*, L! W! La Mina aerea, Luquillo Mts, 19 IV 1963, *Wagner 214*, AMES! **MARTNIQUE:** Without locality, XII 1869, *Hahn 1313*, P! **GRENADA:** Mirabeau mountains, 1 V 1906, *Broadway s.n.*, F! St. Andrews, Grand Etang, 17 III 1924, *Miller 5*, AMES! US! St. Andrews Vicinity of Grand Etang, 500-525 m, 14 III 1946, *Smith 10129*, AMES x2! NY x2! US x2! **GUADELOUPE:** Without locality, I I 1894, *Duss 3846*, F! **TRINIDAD AND TOBAGO:** Tobago Easterfield, 29 IV 1911, *Broadway 4432*, K! **COLOMBIA:** Without locality, *Múnera 149B*, AMO! **VENEZUELA:** Without locality: pressed cult. 10 I 1980, *Hágsater 5561*, AMO! **Bolivar:** Gran Sabana; ca. 10 km SW

of Karaurin Tepui, 900-1000 m, 25 IV 1988, *Liesner 23781*, MO! 2 to 10 km from El Dorado -Santa Elena, 1200-1250 m, 16 III 1974, *Gentry 10513*, MO! Near Camp at km. 118 S of El Dorado, 1080 m, 17 III 1974, *Gentry 10576*, MO! Cerro Guaiquinuma, rio Paragua, 1600-1700 m, 7 I 1952, *Maguire 33021*, AMES! Sororopán-tepuí, east of cerro between east and west end, 2255 m, 14 XI 1944, *Steyermark 60114*, AMES! Cerro El Picacho, 620 m, 3 II 1961, *Steyermark 88998*, NY! Sierra Pakaraima, Cabecera del rio Paragua (Aguapira), a lo largo de la frontera Venezolana-Brasilera, frontera No.15, 1400 m, 4 V 1973, *Steyermark 107309*, AMES! **Táchira:** Uribante, 1100 m, 8 VII 1983, *Van der Werff 5085*, MO! **Amazonas:** 1550 m, 16 X 1987, *Liesner 22017*, MO! Amazonia, 800 m, 14 IX 1979, *Rosa 3443*, MG! **Anzoátegui:** Cerro Peonía (Cerro Los Pajaritos), above Santa Cruz, headwaters of Rio Manantiales, east of Bergantin, 1800-2000 m, 20 III 1945, *Steyermark 61591*, AMES! **Nueva Esparta:** Isla Margarita, San Juan Mt., 650 m, 6 VII 1903, *Johnston 228*, AMES! G! NY! US x2! W!

OTHERS RECORDS: COSTA RICA: Heredia: Vara Blanca, San Miguel de Vara Blanca, 8 II 1978, *Rodríguez 606*, Illustration AMO! **JAMAICA:** Hardware Gap and Foxes' Gap, 1000 m, Gloudon, A. & C. Tobisch, 1995. Orchids of Jamaica, pg. 69., Illustration.

EPIDENDRUM BAUMANNIANUM Schltr. Plate 1104

OTHER SPECIMENS: HONDURAS: Gracias a Dios: Río Platano, pressed cult. 10 IV 1975, *Mathiews s.n.*, SEL! **NICARAGUA: Atlántico Norte:** Siuna, Cooperativa El Hormiguero, 5 II 1983, *Ortíz 848-B*, MO! Along road from Constancia to Laguna Siempreviva, 290-360 m, 21 II 1979, *Stevens 12379*, MO! SEL! N of El Empalme on main road to Rosita, 23 II 1979, *Stevens 12711*, MO! S side of Laguna Siempreviva, 260-300 m, 15 XII 1980, *Stevens 18803*, MO! SEL! **Atlántico Sur:** Río Chiquito, Cano Dos Oros, a 5-7 km al N de Atlanta, 12 XI 1981, *Téllez 4953*, MEXU! **Río San Juan:** Lagunas de San Juan Viejo y en los alrededores de Greytown Nuevo, 6 I 1995, *Rueda 2618*, MO! entre el Poblado de San Juan del Norte y Los Caños Top House y Fish Creek, 29 VII 1996, *Rueda 4666*, MO! **COSTA RICA: Alajuela:** San Carlos, 1 IV 1990, *Blanco s.n.*, USJ! Río Peje, 14 VI 1979, *Ocampo 2588*, CR! **Puntarenas:** Quebrada los Mogos, entre El Tajo y el mar, 150 m, 15 XII 1990, *Herrera 4794*, INB! **COLOMBIA: Cauca:** Um Timbiquí, 1898, *Lehmann, B.T. 1302*, K! **Nariño:** Tumaco, Guandarajo, 28 V 1951, *Romero 2581*, COL! **Chocó:** Virudo, 10 m, 4 VIII 1973, *White 103*, AMES! **Valle del Cauca:** cortina de hidroeléctrica del Alto Anchicayá, 600 m, pressed cult. 26 IV 1983, *Hágsater 7363*, AMO! **ECUADOR:** Pescadillo, 27 IX 1876, *André 787*, NY! **Cañar:** road Duran-Tambo, ca. km 84, 400 m, 2 VII 1960, *Dodson 117*, MO! SEL! road Duran-Tambo, ca. km 94, 1000 m, 21 XI 1957, *Dodson 269*, SEL! **Esmeraldas:** Lita to Alto Tambo, 650-750 m, 18 I 1987, *Dodson 16813*, RPSC! Lita to Alto Tambo (21 kms), 750-850 m, *Dodson 17129*, MO! Lita to Alto Tambo (21 kms), 725 m, 20 V 1987, *Dodson 17162*, MO! km 11-23, Lita to San Lorenzo, 700-880 m, 12 V 1990, *Dodson 18245*, MO! km 3.2 camino Lita a San Lorenzo, 670 m, 11 VII 1990, *Hágsater 10632*, AMO! Lita, Alto Tambo, a 15 km al oeste de Lita, 400 m, 9 IX 1990, *Rubio 694*, QCNE! MO! **[Guayas:]** Guayaquil, 21 XII 1879, *Lehmann 403*, W! **Los Ríos:** Patricia Pilar, Río Palenque Biological Station, km 56 Quevedo-Santo Domingo, 150-220 m, 6 IX 1972, *Dodson 5126*, SEL! Río Palenque Biological Station, km 56 rd. Quevedo-Sto. Domingo, 150-220 m, 10 VIII 1975, *Dodson 5938*, SEL! **Pichincha:** Quevedo-Santo Domingo, 14.5 km N of Luz de América, 1400 ft, 30 VII 1980, *Sauleda 3825*, AMES!

OTHER RECORDS: COLOMBIA: Chocó: Bahía Solano, *Misas 33*, color photo and illustration published in Orquídeas de la Serranía del Baudó. Chocó-Colombia, p. 160-161. **ECUADOR: Esmeraldas:** road Lita-Alto Tambo, 800 m, *Hirtz 5259*, slide, AMO! **Imbabura:** Lita, 650-700 m, 17 I 1987, *Hirtz 3022*, slide, AMO!

EPIDENDRUM BLEPHARISTES Baker ex Lindl. Plate 1105

OTHER SPECIMENS: Without data, *186*, W 55271! Without locality, *Lindley 186*, sketch, W 5821! *Wagener s.n.*, W 50198! **COSTA RICA: Cartago:** La Fuente, 1200 m, 26 XII 1925, *Alfaro 106*, AMES! Las Cóncavas, 6 III 1925, *Lankester 961*, AMES x2! El Retiro, Santa Cruz de Turrialba, 1400 m, I 1941, *Valerio 1352*, CR! F! Naranjo near Turrialba, *Endres s.n.*, W 14250! **COLOMBIA:** Without locality, Hort. by Rogelio Londoño cerca a Guaine, *Múnera 106*, AMO! **Antioquia:** Medellín-Boquerón-San Jerónimo, Cerro del Padre Amaya, km 455, 2140 m, 22 IV 1983, *Hágsater 7268*, AMO! Ríonegro, *Lehmann 7609*, K! San Simón, Río Enc. Cerro Urrao, 1860 m, *Ospina 706*, JAUM! Jardin, Vereda Gibraltar, 2500 m, 4 XII 1991, *Sánchez 1680*, MO! **Boyacá:** Lower Chapon region; Region of Mt Chapon, extreme western part of Dept. Boyacá, north-west of Bogotá, 3000-4000 ft, 4 VIII 1932, *Lawrance 384*, AMES x2! F! S! Camino entre Togui y Chitaraque; hacienda Versalles, orilla derecha del Río Ubaza, 1690 m, 5 VI 1956, *Pinto 51*, COL! **Cauca:** Popayan, I 1906, *Lehmann 435*, K! Highland of Popayan, 1500-2500 m, *Lehmann 8318*, AMO x2! GH! K x2! L! NY! W! San Isidro Puracé, 2200-2400 m, *Pennell 6447*, AMES! NY! El Tambo, 1700 m, 23 V 1934, *Sneidern 94*, S! Ibid. *Sneidern 95*, S! Popayán, Cordillera Central, vertiente occidental, 1700 m, 21 VI 1948, *Sneidern 5629*, US! **Cundinamarca:** Sasaima, vereda San Bernardo, Río Dulce, carretera a Villeta km 66, 1480-1680 m, 18 VI 1945, *García-Barriga 11555*, AMES! US! Cabrera, floreció en San Claver, Santandercito, 1900 m, I 1971, *Ortíz Valdivieso 409*, HPUJ! Pacho, hacienda Patasía, 2000-2100 m, VI 1948, *Uribe 1717*, COL! US! **La Guajira:** Sierra Nevada de Santa Martha; Paramo de Macotama, on slope above Indian village, San Miguel, ca. 1750 m, 13 II 1959, *Barclay 7085*, AMES! COL! MO! "Caracas" (Amerique Meridionale) Monts S. Marta, *Funck 312*, G! P! **Nariño:** La Unión, Cerro La Jacoba, 1990-2440 m, *Díaz 912*, COL! San Juan de Pasto, Carretera Nariño-La Florida, 1900 m, 5 I 1976, *Salazar de Benavides 416*, COL! **Putumayo:** Samañego bei Pasto, 1200-1800 m, 15 VII 1880, *Lehmann 40*, G! **Tolima:** Cordillera Central; Caño del Río Anaime, Hacienda Santa Hita, 1800-1900 m, 25 XII 1973, *García-Barriga 20410*, AMES! COL x2! F! GH! US x2! **Santander:** Northern slope of Mesa de Los Santos, eastern cordillera, 1000-1500 m, 11 XII 1926, *Killip 15370*, AMES x2! NY! Vicinity of Suratá, ca. 1700 m, 4 I 1927, *Killip 16752*, AMES! NY! US! Mesa de Los Santos, 5 I 1968, *Ortíz Valdivieso 32*, P.O.V.! Río Juárez-Tal zwischen Chiquinquira und Barbosa, Puente Nacional und Agua Blanca, 1600 m, 30 III 1956, 30 III 1956, *Renz 8540*, RENZ! **Valle del Cauca:** Calí, carretera al mar, 1800 m, 7 VII 1937, *Dryander 1948*, US! **ECUADOR:** Without locality, *Sodiro s.n.*, QPLS! **Carchí:** Road from Tulcán to Chical. Pacific slope, just above town of Puente de Palo, which is about 4 km above Maldonado, 1900 m, 13 V 1993, *Boyle 1818*, MO! QCNE x2! ca. 3 km above Maldonado, 1550 m, 23 V 1993, *Boyle 1860*, MO! Road Tulcán to Maldonado via Páramo El Angel km 69, 2350 m, 1 VIII 1985, *Dodson 16193*, AMES! MO! QCA! QCNE! Valle de Maldonado, km 71 on road Tulcán-Maldonado, 2100-2200 m, 20 V 1973, *Holm-Nielsen 6052*, AAU! Vicinity of Maldonado, 1650 m, *Madison 3870*, SEL! Maldonado-Tulcan road km 2-6, 1500-1700 m, 1 X 1981, *Werling 72*, AAU! AMES! MO! QCA! **Bolivar:** Guaranda to Chimborazo, *Neeiter s.n.*, MA! **Cotopaxi:** Tenefuerte, Río Pilaló km 52-53, Quevedo-Latacunga, 750-900 m, 12 VI 1983, *Dodson 13928*, MO! SEL! Tenefuerte, km 55 Quevedo-Latacunga, 800 m, *Dodson 14293*, MO! QCA! QCNE x2!

Tenefuerte, km 53 Quevedo-Latacunga, 850-1000 m, 24 VIII 1984, *Dodson 14404*, MO! QCA! QCNE! **Imbabura:** Cordillera Occidental, along Intac trail between Apuela and Monopamba, 3400 ft, 7 IX 1944, *Drew E-525*, AMES x3! **Napo:** road from Baeza to Cosanga, 18 XII 1976, *Davis 542*, COL! GH! S! km 91, Quito to Baeza, 1900 m, 30 VI 1985, *Dodson 15879*, MO! QCNE! km 0.5 Baeza-Tena, 7000 ft, 12 XI 1984, *Hágsater 7627*, AMO x2! Pifo-Baeza entre desviación Lago Agrio y Baeza, ca. 1900 m, 6 XII 1986, *Hágsater 8912*, AMO! Baeza, 1800 m, III 1983, *Hirtz 859*, SEL! 3.5 km W of Baeza, 1830 m, 26 X 1971, *MacBryde 844*, AMES! MO! QCA! SEL! SE of Cuyuja, 31 km from Papallacta on road to Baeza, along Río Papallacta, 2000 m, 22 II 1985, *Molau 1356*, GB! QCA! **Pichincha:** 8 km west of Tandapi, km 52 new road Quito-Santo Domingo, 1200 m, 6 II 1982, *Dodson 12138*, SEL! km 40-51 on road Santo Domingo de Los Colorados-Quito, along Río Pilato, 1100-1400 m, 14 VI 1973, *Holm-Nielsen 7175*, AAU! AMES! HB! MO! S! SEL! road Alóag-Tandapi, junction of Río Tandapi and Río Pilatón, 1800 m, 4 VII 1979, *Holm-Nielsen 18463*, AAU! Carretera Quito-Nono-Tandayapa, 1500-1800 m, 5 IX 1991, *Rubio 2072*, MO! Santo Domingo-Quito Road, 60.2 km north of Zaracay Hotel, 5600 ft, *Sauleda 3892*, AAU! MO! U! Tandapi and Bernard, *Sodiro s.n.*, QPLS! Road Aloag-Santo Domingo, Tandapí (Manuel Cornejo Astorga), at the confluence between Río Tandapí with Río Pilatón, 1500 m, 19 I 1967, *Sparre 14035*, S! **Zamora-Chinchipe:** Zamora, Romerillos Bajo, Eastern border of Podocarpus National Park, Fundacion Maquipucuna, 1550 m, 6 XI 1996, *Clark 3421*, LOJA! QCNE! SEL! **PERU:** km 160, 22 I 1946, *Seibert 2386*, AMES x2! K x2! L! NY! W! **Amazonas:** 16 km SW of Pomacocha, 1830 m, 7 II 1988, *Gentry 61349*, AAU! MO! NY USM! Chachapoyas, Kuelap Fortress and surrounding, 3000 m, 16 V 2001, *Henning 267*, USM! Chachapoyas, Cerros Calla Calla, 7.5 km above Leimebamba on the road to Balsas, 2535 m, 27 III 1964, *Hutchison 4646*, AMES! UC! Bongará, km 330-319 Moyobamba-Bagua road, 2000-2200 m, 19 II 1984, *Smith 6045*, MO! USM! Bongará, Pomacochas, hills NW of town, 2200-2400 m, 6 II 1985, *Todzia 2657*, CAS! MO! Along road Pedro Ruiz-Laguna Pomacochas, 1550-2000 m, 19 III 1998, *van der Werff 15174*, MO! [**Ancash:**] 40 Km west of San Ramon on the road to Taulis, 2200 m, 22 VIII, *Dodson 2710*, SEL! **Apurimac:** Apurimac Valley, Quebrada Piucopa, 2800 m, XII 1926, *Herrera 1456*, US! Andahuaylas, Pincos, 2700 m, 19 II 1939, *Stork 10670*, UC! On lower slopes of Puma-urcu above Hacienda Santa Isabel, 1.52 km southeast of Chachapoyas, 2400-2500 m, 20 V 1962, *Wurdack 432*, AMES! NY! US! **Ayacucho:** Ccarrapa, between Huanta and Río Apurimac, 1500 m, 5 V 1929, *Killip 22342*, AMES! NY! Ibid., *Killip 22470*, AMES! NY! **Cajamarca:** Celendín, La Tranca, Celendin, 2600 m, 22 V 1960, *López 3140*, AMES! Celendín, Conga de Urquia (Sucre-Ozamarca), 2500 m, 19 V 1976, *Sagástegui 8436*, F! MO! SEL! bajando la Conga de Urquia entre Sucre y Oxamarca, 2800 m, 20 V 2003, *Sánchez 1759*, F! Jaen, Linkes Seitental des Flusses Huancabamba über Shumaya, in 2400-2500 m, Mai 1912, *Weberbauer 6292*, AMES! F! **Cusco:** Pillahuata, 2700-2900 m, 24 III 1992, *Cano 5320*, USM! Urubichá, San Miguel, 1950 m, 22 I 1975, *Chávez 3117*, MO! Urubambatalhang zwischen Puente Ruinas und Machu Picchu, ca. 2300 m, 28 II 1969, *Doppel baur s.n.*, MO! Aguas Calientes, Machupicchu, Bewuchs einer alte Treppe, 9 IV 1957, *Ellenberg 868*, U! Pillcopata a Pillahuata, 1745-2238 m, 27 III 2005, *Fernández 101*, USM! Marcapata, Alrededores de Marcapata, a 16 km de Marcapata con dirección a Quincemil, 2530 m, 13 IX 1984, *Fernández 495*, USM! Paucartambo: Valle del Pilcopata, form Patria to Pillahuata, 2000 m, 13 XII 1983, *Foster 7479*, USM! Machu Picchu along old Inca Trail, 2600 m, 17 IV 1977, *Gentry 19380*, MO! Pillahuata, Paucartambo-Pilcopata road, 2290 m, 12 X 1979, *Gentry 26716*, SEL! Machu Picchu, 2500 m, 19 IV 1954, *Hink P805*, AMES! La Convención, Ollantaitambo, 3000 m, 21 VI 1982, *Hoogte 764*, MO! La Convención, Huyro, 2500 m, 30 VI 1984, *Hootge 1644*, MO! Ollantaitambo, Huiro, 2300 m, VIII 1985, *Hoogte 2021*, F! Quispicanchis, Marcapata; 176 km from Cusco on road to Maldonado, 3150 m, 8 III 1991, *Nuñez 13079*, MO! Paucartambo, Kosñipata; Manu National Park and Pillahuata forests, 1900 m, 20 III 1991, *Nuñez 13256*, CAS! MO! USM! Pillahuata, "Pillahuata" Cerro de Cusilluyoc, 2200-2400 m, 3 V 1925, *Pennell 13985*, AMES! Ibid. 2200-3000 m, 3 V 1925, *Pennell 14063*, AMES! Pillcopata, Kosnipata Valley, road from Pillawata to Patria, 6740 ft, 4 II 1975, *Plowman 4945*, U! Marcapata, Hda. Ttio, Marcapata, 2000 m, 27 I 1943, *Vargas 3129*, CUZ! Tanamayo, 2200 m, V 1960, *Vargas 13278*, AMES! Pucartambo, km 134, hacia Yanamayo, 1750-2000 m, 20 VI 1963, *Vargas 14719*, AMES! **Huancavelica:** Tayacaja, Paraje Llactapata. Distr. Huachocolpa, 2700 m, 16 VI 1999, *Suárez 3044*, USM! Tayacaja, Huachocolpa, *Suárez 3047*, USM! Tayacaja, 3 km abajo de Surcubamba, 2300 m, 16 IV 1962, *Tovar 3702*, USM! **Huanuco:** Muña, ca. 7000 ft, 23 V 1923, *MacBride 3973*, AMES! WIS! from Huanuco to Ambo, *Mathews s.n.*, K! **Junín:** Tarma, on hillsides above Huacapistana, 2000 m, 15 XI 1987, *Bennett 4081*, USM Satipo, IX 1990, *Castillo 001*, AMO! Huacapistana, entre Tarma y San Ramón, 1800 m, 27 VI 1954, *Constance 2264*, UC! between Tarma and San Ramón, 34.3 km NE of main plaza in Tarma, 2400 m, 31 III 1984, *Croat 57690*, CAS! MO! Tarma, 2650-2800 m, 19 IV 1984, *Fernández 288*, USM! Satipo, Cara del Diablo, Yungorplaya, entre Mariposa y Calabaza, Distrito Pampahermosa, 1810-2020 m, 28 X 1984, *Fernández 644*, USM! Tarma, Arriba de Carpapata, 2350-2400 m, 28 VI 1948, *Ferreyra 3736*, AMES x2! UC! USM! Tarma, Yanamayo, entre Tarma y Palca, 2600-2700 m, 28 VI 1948, *Ferreyra 3746*, USM! Tarma, Carpapata-Huacapistana, 2300-2400 m, 23 V 1955, *Ferreyra 11019*, UC! about 40 km W of San Ramón, 2020-2400 m, 27 II 1982, *Gentry 35758*, MO! Canyon of Río Huasahuasi, below Huasahuasi in valley bottom, mouth of george, near river, ca. 2400 m, 10 VIII 1957, *Hutchison 1081*, AMES! UC! US! Canyon of Río Huasahuasi, below Huasahuasi in valley bottom, mouth of george, near river, ca. 2400 m, 10 VIII 1957, *Hutchison 1085*, AMES! UC! Tarma, Canyon of Río Huasahuasi, below Huasahuasi in valley bottom, mouth of gorge, near river, ca. 2400 m, 12 VIII 1957, *Hutchison 1137*, AMES! UC! Huacapistana, 1800-2400 m, 6 VI 1929, *Killip 24201*, AMES! Road to Huasahuasi from main Tarma-San Ramon road, ca. 3000 m, 13 V 1982, *Landrum 4577*, NY! San Ramón y Tarma, Palca, ca. 2700 m, 27 VI 1976, *Lourteig 3111*, HB! between Tarma and San Ramon, 2900 m, 29 I 1979, *Luer 3777*, SEL! Tarma, Road from Tarma to San Ramón, Carpopata, 2300 m, 16 III 1976, *Plowman 5625*, AMES! F! Palca-Tal, Strasse Tarma-La Merced, 1000-2500 m, V 1940, *Renz 3130*, RENZ! below Palca-Huacapistana, 8000 ft, VI 1938, *Sandeman s.n.*, OXF! below Palca, on the way down to Huacapistana, 8000 ft, VI 1938, *Sandeman 93*, K! above Huacapistana, 5500 ft, VI 1938, *Sandeman 263*, K! Tarma-La Merced road, near Carpapata, 30-34 km from Tarma, 2400 m, 28 I 1984, *Smith 5916*, F! MO! Tarma: between Palca and Carpapata, 2900 m, 18 III 1939, *Stork 10961*, K! UC! Tarma, Agua Dulce, 2400 m, 14 III 1948, *Woytkowski 35466*, AMES! UC! Ibid. *Woytkowski 35467*, AMES x2! UC! **San Martín:** Huallaga, Valley of Río Apisoncho, 30 km above Jucusbamba, 2800 m, 23 VIII 1965, *Hamilton 1406*, AMES! K! Rioja, Buenos Aires, along road Pedro Ruiz-Rioja, 2000 m, 21 III 1998, *van der Werff 15363*, MO! USM! **BOLIVIA:** Without locality, *Bang s.n.*, MO 7353! Ibid. *Bang 2265*, AMES! E! Gx2! GH! K! M! Z! W! WU! Ibid. 1600 m, 13 IV 1892, *Kuntze s.n.*, NY! Miguelito au Frejau, 1500 m, 13 IV 1892, *Kuntze s.n.*, NY! au Frepau, 1600 m, 13 IV 1992, *Kuntze s.n.* F! **Cochabamba:** Near Locotal-Chapare-Bolivia, 1800 m, IV 1950, *Cárdenas 4578*, US! Northeast of Cochabamba, towards Villa Tunari, 1750 m, 26 XI 1978, *Luer 3487*, SEL! On road Cochabamba-Villa Tunari, 1825 m, 22 IV 1982, *Meenks 355*, U! Chapare, Highway to the Chapare: between the towns of Inca Chaca and Locotal, ca. 1905 m, 14 V 1995, *Ritter 2040*, MO! **La Paz:** Highway La Paz-Coroico, Unduavi, 3255 m, 30 III 1977, *Boeke 1389*, SEL! Road from Unduavi to Chulumani, ca. 1.1 km E of Unduavi, 9900 ft, 15 XI 1976, *Davidson 5038*, MO! US! Murillo, Zongo Valley, N of La Paz, near end of road 40-44 km from Lago Zongo dam, 1300 m, 28 I 1984, *Gentry 44757*, MO! Nor Yungas, Unduavi, 3090 m, 22 VII 1977, *Graf P629b*, G! Unduavi River, between La Paz and Coroico, 2260 m, III 1924, *Julio 202*, AMES x2! US! Inquisivi, "Tupayo" along the road between Quime and Inquisivi in Communidad Tupayo, 2 km SW of Inquisivi, 2960 m, 14 V 1990, *Lewis 37257*, MO! Inquisivi, "Abra de Alto Polea" Along the road between Alto Polea and Poqueloque where it crosses the pass, 2780 m, 5

VI 1990, *Lewis 37361*, MO! Along Río Zongo, north of La Paz, 2600 m, *Luer 4959*, SEL! Nor Yungas, 6000 ft, 1885, *Rusby 2743*, NY! Nor Yungas, 6.5 km NE (below), Unduavi on road to Yolosa junction (Coroico), 3000 m, 29 II 1980, *Solomon 5220*, MO! SEL! Nor Yungas, 15.7 km S (above) Yolosa, 2200 m, 26 III 1982, *Solomon 7381*, MO! NY! SEL! 16.2 km NE (below) Chuspipata (13.5 km S of Yolosa), 1900 m, 19 VII 1982, *Solomon 8040*, MO! SEL! Murillo, 27.4 km below N dam at Lago Zongo; Valle del Zongo. North facing slopes more disturbed, drier, 2500 m, 16 III 1984, *Solomon 11878*, MO! Murillo, Valle de Río Zongo. 26.4 km al N de la cumbre, 2750 m, 8 I 1988, *Solomon 17487*, MO! Valle del Río Zongo, 32.1 km al N de la cumbre, Cerca de la boca del Río Jachcha Cruz, 2200 m, 14 II 1988, *Solomon 17840*, MO! NY! U!

OTHER RECORDS: COSTA RICA: Without locality, *Rodríguez Caballero 285*, xerox of illustration, AMO! **COLOMBIA:** Without locality, *G. Escobar s.n.,* slide color, AMO! **Antioquia:** Without locality, 1800-2000 m, *Duque 322*, color photo, AMO! Amalfi, *Escobar 612*, slide color, AMO! **Cundinamarca:** Cabrera, floreció en San Claver, Santandercito, 1900 m, I 1971, *Ortíz Valdivieso 409*, xerox of illustration, AMO! **Santander:** Mesa de Los Santos, 5 I 1968, *Ortíz Valdivieso 32*, xerox of illustation, P.O.V.! **ECUADOR: Napo:** km 0.5 Baeza-Tena, 7000-10,000 ft, 12 XI 1984, *Hágsater 7627*, spirit, flower card and illustration, AMO! **PERU: Cusco:** Cusco, *Nuñez s.n.*, slide color, AMO! **Junín:** Tarma, on hillsides above Huacapistana, 2000 m, 15 XI 1987, *Bennett 4081*, xerox of illustration, AMO!

EPIDENDRUM BUENAVENTURAE F.Lehm. & Kraenzl. Plate 1107

OTHER SPECIMENS: MEXICO: Veracruz: Jesús Carranza, Región de Uxpanapa, donde inicia el lomerío al pie de la vertiente N de la Sierra de Tres Picos, cerca del límite con Oaxaca, 180 m, 30 III 1996, *Salazar 5530*, AMO! Ibid. *Salazar 5544*, AMO! **CHIAPAS:** Ocosingo, a 4.5 km al SE de la zona arqueológica de Bonampak, 256 m, 10 II 2003, *Álvarez 3701*, MEXU! Ocosingo, a 1.5 km al NO del crucero San Javier, 404 m, 14 IV 2003, *Álvarez 4758*, MEXU! (Illustration voucher) **NICARAGUA: Matagalpa:** El Roblar, 2500 ft., *Heller 3073*, SEL! **COSTA RICA: Puntarenas**: Isla del Caño, 40 km NW of Corcovado Natl. Park, 1 II 1983, *Gómez 19984*, MO! **PANAMA: Chiriquí:** 12.4 miles N of David, 14 XII 1966, *Lewis 713*, AMES! **Panama:** Archipielago de Las Perlas 2.5 hr walk from village of La Esmeralda on trail to village of La Guinea, 0-100 m, 20 I 1982, *Knapp 2969*, MO! **Cocle:** Bismark above Penonomé, 19 III 1908, *Williams 595*, NY! **COLOMBIA:** Without locality, Cult. Orquídeas del Valle cerca de Cali, *Escobar 5373*, AMO! **Antioquia:** Parque Nacional Natural "Las Orquídeas", Sector Calles, margen derecha del río Calles y de la quebrada "El Guaguo", 1390-1420 m, 12 II 1989, *Cogollo 3912*, JAUM! Parque Nacional Natural "Las Orquídeas", Margen derecha del Río Calles, 1300 m, 21 II 1989, *Cogollo 4160*, JAUM x2! **Valle del Cauca:** Río Calima (región del Chocó); La Trojita, 5-50 m, 19 II 1944, *Cuatrecasas 16471*, AMES! Valle, road between Anchicaya and Buenaventura, near Agua Clara, 20-50 m, 14 X 1982, *Folsom 10507*, AMO! Bahía de Malaga, mouth of Quebrada Sierpe, 0 m, 17 II 1983, *Gentry 40428*, COL! JAUM! SEL! Anchicaya, río debajo de Queremal, km 33.044, 1250 m, 23 XI 1983, *Hágsater 7346*, AMO! Punta Arenas, north shore of Buenaventura Bay, ca. 10 m, 5 VI 1944, *Killip 38618*, COL! Buenaventura, 10 m, 5 V 1944, *Killip 38820*, COL! bei Buenaventura an der Küste, *Lehmann sub H. K. 495*, K! Buenaventura C"tes près de Buenaventura, 29 X 1880, *Lehmann 95*, G! Buenaventura, Juntas, *[Lehmann] 249,* AMES! K! L! Buenaventura, Rio Dagua, Juntas, 300 m, 14 IX 1881, *Lehmann 954*, G! Buenaventura près de Juntas, 300 m, 10 IX 1882, *Lehmann 1926*, G! Rio Dagua, 1 X 1887, *Lehmann 6705*, K! Bajo Calima, Concesión Pulpapel/Buenaventura, Carretera Gasolina, 100 m, 15 X 1987, *Monsalve 1941*, MO! **Cauca:** Parque Nacional Isla Gorgona, Guapi, East side of Gorgona Island, 50-100 m, 11 II 1939, *Killip 33174*, US! Parque Nacional Isla Gorgona, Guapi, Gorgona Island, 3 VII 1924, St. George Exped. 311, Kx2! an den Schündüngen der Flusse Timbiquí, Micay, Naya, Yurumanguí, 1 m, VIII 1898, *Lehmann sub H. K. 541*, K! am Río Timbiquí, 1 m, *Lehmann sub H. K. 544,* K! um Cotejé um Río Timbiquí, *Lehmann sub H. K. 547*, K! Parque Nacional Isla Gorgona, Guapi, Alto de los Micos, 9 IX 1987, *Lozano 5726*, COL!

OTHERS RECORDS: NICARAGUA: Matagalpa: El Roblar, 2500 ft., *Heller 3073*, Illustration!

EPIDENDRUM CORONATUM Ruiz & Pavón Plate 1113

OTHER SPECIMENS: MÉXICO: Veracruz: Hidalgotitlán, 8 km al E del Campamento Hermanos Cedillo rumbo a La Laguna, 70 m, 30 III 1974, *Ponce 234*, MEXU! **GUATEMALA:** *Skinner*, K-L, photo AMES! **NICARAGUA: Zelaya:** Along new road from Siuna to Matagalpa ca 2.7 km beyond, Río Uli (Near Wani), ca. 100 m, 6 V 1978, *Stevens 8796*, MO! **COSTA RICA:** Hort. Kew, *Lankester 3*, K! AMES! Hort. Kew, *Lankester 7*, K! AMES! sent to Ceiba Garden of Athina Institution in 1935, *Lankester s.n.*, AMES! Mirador de San Martín, 300 m, *Valerio 2591*, AMES! **Alajuela:** Pacífico, orillas del Río Machuca, cerca de San Mateo, 350-500 m, 27 VI 1983, *Hágsater 6423*, AMO! Pacífico, orillas del Rio Machuca, cerca de San Mateo, 350-500 m, 15 V 1984, *Hágsater 6546*, AMO! (Illustration voucher) INB! Pacific slope, rare in Mountains south of Orotina 01 III 1958, pressed cult. 24-VI-1962, *Horich s.n.* UC! **Cartago**: Turrialba, (Colleguim to Atirro), *Endres s.n.*, W! Atirro, 600 m, IV 1896, 6000 ft, *Smith 6802*, US! **Limón:** San Carlos, Aguas Zarcas, 01 IV 1925, *Jiménez 2080*, AMES! **Puntarenas:** Entre Puerto Jiménez y Río Nuevo de Osa, 20 m, 1 IV 1930, *Brenes 1216*, AMES! **San José:** Without locality, 15 VI 1924, *Alfaro s.n.*, US! Ibid. 10 VIII 1959, *Horich s.n.*, UC! **PANAMA: Veraguas:** Near Santiago, *Powell 25* AMES! Yeguada, San Juan, 52 m, 01 V 1924, *Powell 3558*, AMES! Santiago de Veraguas, from Gustavo Lara region, from Veraguas near Santiago, *Powell 4286*, AMES! **Panamá:** Barro Colorado Island, Canal Zone, Wheeler trail 25 X 1931, *Shattuck 216*, AMES! MO! F! Ibid., Zetek Trail, 26 VIII 1970, *Croat 11905*, AMES! MOx2! Ibid., 1800 m, 10 V 1968, *Croat 5462*, MO! Barro Colorado Island, Canal Zone, *Aviles 79*, F! Ibid., 1 I 1933, *Aviles X-10*, F! MO! Canal Zone, 80 m, 30 IV 1974, *Nee 11403*, MO! Gatum Lake, 0 m, 01 V 1924, *Powell 3558*, AMES! **Darién:** 3.7 miles W of Santa Fe on Pan-America Highway, then 0.7 miles N on logging trail, 20-50 m, 22 IV 1982, *Huft 1944*, MO! Río Congo, 01 IV 1967, *Bristan 668*, MO! Trail along ridge south of Río Setigandi, almost on Colombian border, 700-1000 m, 21 IV 1980, *Gentry 28729*, MO! **TRINIDAD y TOBAGO: Trinidad**: Maraval, *Broadway 6196*, BM! MO! Maracas road to the Bay, south side of the Ridge, 13 III 1927, *Broadway 7344*, BM! Trinidad, 01 VI 1933, *Broadway s.n.*, BM! Santa Cruz, 01 I 1911, *Broadway s.n.*, MO! Coparo, 27 IV 1908, *Broadway s.n.*, AMES! St. Clain Experimental Station, 04 IV 1908, *Broadway s.n.*, AMES! St. Ann on a Tose, 22 IV 1934, *Broadway s.n.*, AMES! Sin datos: Trinidad, W! **COLOMBIA: Antioquia:** San Luis Canon del Río Claro, sector norte, margen izquierda, 325 m, 05 III 1984, *Cogollo 1350*, COL! San Luis Caín del Río Claro, sector norte, margen izquierda, 325 m, 5 III 1984, *Cogollo 1350*, MO! San Luis Quebrada "La Cristalina", 470-500 m, 24 II 1987, *Ramírez 662*, JAUM! um Dabeiba, West Andes von

Antioquia, 300-600 m, auf Baumen und Felpen, *Lehmann 4638*, AMES! um Dabeiba, West Andes von Antioquia, 300-600 m, 1 I 1906, *Lehmann 4638*, K! **Bolivar:** 8 km NW of San Jacinto arro Pijinal, 350 m, *Arno Beuther 98*, COL! Guimarí, Cordillera Occidental, Vertiente Oriente, 500 m, 28 IV 1949, *Sneidern 5782*, S! Quimarí, Cordillera Occidental, Vertiente Occidental, 500 m, 01 III 1949, *Sneidern s.n.*, S! **César:** Cordillera Perijá o de Los Motilones, zwischen Codazzi und S. Genaro, 1000 m, 06 III 1941, *Renz 3137*, RENZ! Manaure, Near stream of Manaure, 700 m, 27 IV 1944, *Haught 4121*, AMES! COL! **Cundinamarca:** Bogotá, cult. Exp. Sta. Mayagüez, Puerto Rico, 13 VI 1941, *Hom 6327-1*, AMES! **Meta:** San Miguel, orquídeas Eva, Shigenobu Tsubota, *Aguirre s.n.*, AMO! Sierra Macarena, Umgebung von Camp Plaza Bonita, 350 m, 17 II 1937, *Renz 3061* RENZ! S. Miguel-Villavicencio, 200-250 m, 27 II 1937, *Renz 3108*, RENZ! Zwischen Uribe und Rio Guayabero, 500 m, 15 IV 1939, *Renz 3129*, RENZ! **Santander:** Vicinity of Barranca Bermeja, Magdalena Valley, between Sogamoso and Colorado rivers, Near Zarzal creek, 100-500 m, 7 V 1935, *Haught 1590*, AMESx2! US! **VENEZUELA: Aragua:** Guamitas, P.N. 760 m, 1 V 1938, Williams 10075, F! **Bolivar:** Caño Pablo, tributario del Río Caura; aprox 6 km E-SE de "Las Pavas" (Salto Para), 240 m, 9 V 1982, *Morillo 9019*, MO! Piar, El Pao, Eisen-Mine, 450 m, 16 III 1959, *Renz 9442*, RENZ! **Distrito Federal:** Caracas: *Lansberg s.n.*, W! **Lara:** Palavicini, zwischen Barquisimento und Acarigua, Hacienda Torellero, der rio Jarare, zwischen Sarare und Agua Blanca, 200 m, 16 V 1959, *Renz 9466*, RENZ! **Monagas:** Carretera Maturin-Caripe, ca. 700 m, 1 V 1953, *Aristeguieta 1737*, NY! **Táchira:** Páramo La Negra, 2800 m, 29 X 1949, *Renz 5998*, RENZ! Rio Cuite, quebrada El Barro, 500 m, 4 V 1951, *Renz 6869*, RENZ! Rio Uribante-Tal, oberhalb Peña Uribante, 300 m, 16 V 1951, *Renz 6678*, RENZ! **Zuliá:** Rio Cogollo, am Fuss der Perijá-Kette, ca. 100 m, 19 III 1950, Renz 6269, RENZ! **GUYANA:** U. Takutu.- U. Essequibo Region, NW Kanuku Mts., tributary of Nappi Creek at rapids called "The Waterfall", 150-200 m, 14 II 1993, *Hoffman 3783*, F! NY! **ECUADOR: Napo:** Sopó Chiro Isla community, north bank of Rio Napo about 195 km downstream from Puerto Francisco de Orellana (Coca), 200 m, 13 XII 1990, *Bensman 312*, QCNE! MO! near Coca, ca. 300 m, *Dodson 17316*, MOx2! km 4 Misahuali-Pto. Napo, 0-600 m, 25 XII 1982, *Hágsater 7012*, AMO x4! Coca (Puerto Francisco de Orellana), near the confluence of Río Coca and Río Napo, ca. 350 m, 06 II 1974, *Harling 11807*, GBx2! Ibid., trail along Río Payamino, ca. 350 m, rastrojos, on fallen trunk, 12 II 1974, *Harling 11924*, GB! **Pastaza:** Pozo petrolero Namoyacu de UNOCAL. 30 km al sur del pueblo de Curaray, 290 m, bosque tropical humedo, primario, 13 XI 1990, *Espinoza 509*, MO! QCNE! Coca, 29 III 1976, *Weinhold, Bin/ OIC 403*, SEL! **Morona-Santiago:** Zuñac, along new road from Macas to Guamote, 800-1800 m, 5 II 1987, *Hirtz 3163*, AMO! RPSCx2! Centro Shuar Yukutais, Chacras south of Centro, 150 m, 22 IV 1989, *Bennett 3789*, NY! QCNE! Centro Shuar Yukutais. West of Pedro kunkumas house and south of school, 900 m, 12 III 1990, *Bennett 4067*, NY! QCNE! **PERU: Cajamarca:** San Ignacio along trail 7 km W of La Coipa, 1200 m, occasional, edge of secondary growth in rainforest, 8 II 1978, *Wasshausen 872*, US! **Loreto:** Iquitos Vicinity of Iquitos, 100 m, 01 XI 1936, *Klug 10025*, AMES x3! US! Cordillera Azul, Coronel Portillo Distrito Calleria, Bosque Nacional Alexander von Humboldt, carretera a Pucallpa, km 86, 250-300 m, 27 VII 1978, *Shunke 10381* MO! **Huanuco:** Leoncio Prado, Tingo María forest, 31 VIII 1940, *Asplund 13400*, S! Valle del Rio Paucartambo Colonia del Perenne, 600 m, 12 IX 1920, *Weberbauer s.n.*, UC! USM! **Pasco:** Oxapampa above Paucartambo, 1450 m, 1 VII 1964, *Bennett 1312*, UC! **San Martín:** Juan Jui, alto Río Huallaga, ca. 400 m, 1 IX 1934, *Klug 3815*, AMES! Fx2! MO! NY! S! US! alto Río Huallaga, Dtto. Campanilla, Rio Chite (margen izquierda del rio Huallaga), 26 VIII 1970, *Schunke 4309*, COL! F! NY! US! Distrito Tocache Nuevo, Quebrada de Pólvora, 10 km abajo de Puerto Pizana, (margen derecha del río Huallaga), 01 VI 1971, *Schunke 4948*, F! NYx2! US! Dtto, Tecache Nuevo, Quebrada de Yacu Sisa, (camino a Shunté), 800-850 m, 18 VII 1974, *Schunke 7529*, MO! SEL! Tarapoto ad rivulorum Laxa, 01 VIII 1855, *Spruce 4158*, K! W x2! **Junín:** Valle del Chanchamayo, Tarma Alto Mazamari, Satipó, 850 m, *Ridoutt s.n.*, USM! Valle del Chanchamayo, Pueblo Pardo, a 26 km de San Ramón, 800 m, 27 VIII 1982, *Fernández 97*, USM! Chanchamayo "El Refugio", San Ramón, 800 m cultivada, procedente del bosque, 30 VIII 1984, *Fernández 435*, USM! Puerto Ocopa, a 85 km al NE de Satipo, Distrito Río Tambo, ca. 360 m, 1 XI 1984, Fernández 681, USM! Mazarami, 1000 m, 08 IX 1970, *Woytkowski 5981*, MO! **Cusco:** La Convención cerca de Quempiri, casería de campas, 460-480 m, selva tropical, 23 VIII 1965, *Ferreyra 16337*, USM! Cusco y su ceja de selva y los valles interandinos, *Núñez s.n.*, AMO! **Madre de Dios:** Tambopata, Cuzco Amazónico, 200 m, 21 VI 1989, *Phillips 585*, MO! Tambopata Las Piedras, 2 200 m, Cuzco Amazónico, 26 VII 1989, *Nuñez 11208*, MO! Manu Park, Cocha Cashu, 400 m, 30 VIII 1986, *Nuñez 5979*, MO! Parque Nacional del Manu, Cocha Cashu Biological Station, 1 X 1983, *Davidson 24*, MO! Rio Manu: Cocha Cashu Station, 350 m, 23 VII 1979, *Foster 6830*, Fx2! Rio Manu, Cocha Cashu Station, 22 VII 1981, *Foster 8419*, F! Rio Manu: Cocha Cashu Station, 350 m, floodplain forest, on fallen Luehea, 24 VIII 1984, *Foster 9889*, F! **BRASIL: Paraná**: Cerro Azul, Barra de Lageado Grande, *Hatschbach 41568*, UC! **Sao Paulo**: entre Andredina e Pereira Barreto, 1 X 1962, Brolio s.n., SP! Itapura, on rio Tiete, 500 ft, 29 IX 1940, *Mulford 1221*, AMES! Prope Salto grande d. Rio Paranapanema, ca. 500 m, 1 VIII 1901, *Wettstein s.n.*, WU! **BOLIVIA:** Amazon Basin, 2nd portage, Bopi R., 1800-2200 ft, 8 VIII1921, *White 292*, AMES! **Pando:** Manuripi Isla Gargantua opposite Chive, 240 m, 18 IX 1983, *Solomon 10868*, MO! **Beni:** Amazon Basin, Bapicalants...., 3000 ft, *Rusby 490*, AMES! Amazon Basin, 3000 m, *Rusby 588*, AMES x3! Rurrenabaque, 1500 ft, 10 VII 1921, *Rusby 825,* AMES! Vaca Diez 20.8 km E of Riberalta on road to Guayaramerin, ca. 230 m, 25 IX 1981, *Solomon 6417*, MO! Amazon Basin, Mts. near Rurrenalaque, 900-1000 ft, 06 X 1921, *White* 856, AMES!

OTHER RECORDS: BOLIVIA: Cochabamba: Carrasco Mariposas, 300 m, 19 VIII 1980, *Vásquez 454*, illustration, xerox AMO!

EPIDENDRUM CRINIFERUM Rchb.f. Plate 1114

OTHER SPECIMENS: Cult. King´s Road, Chelsea, London, *Bull 836*, W! **NICARAGUA:** Without locality data, *Heller 3895*, SEL! **Matagalpa:** Cultivated from live plant at site 615, Macizos de Peñas Blancas, SE side, drainage of Quebrada El Quebradón, slopes N of Hda. San Martín ca. 950-1000 m, 25 XII 1981, *Stevens 20951*, MO! SEL! SE side, drainage of Quebrada El Quebradón slopes N and W of Hda. San Martín, ca. 1000-1400 m, 18 I 1982, *Stevens 20979*, MO! Macizos de Peñas Blancas, SE side, drainage of Quebrada El Quebradón, slopes N and W of Hda. San Sebastián, 800-1100 m, 21 I 1982, *Stevens 21235*, MO! SEL! **Boaco:** El Roblar, 820 m, I 1962, *Heller 3981*, SEL x2! **COSTA RICA: Guanacaste:** Río Chiquito, bajos de San Pedro, 650-700 m, 15 I 1987, *Haber 6584*, AMO x3! CR! F! MO! El Silencio, near Tilarán, ca. 750 m, 13 I 1926, *Standley 44790*, AMES! Los Ayotes, near Tilarán, 600-700, 21 I 1926, *Standley 45474*, AMES! **Puntarenas:** La Unión, Cantón de Osa, 5 III 1936, *Lankester 1393*, AMES! Paso del Río Coto, II 1897, *Pittier 11191*, BR! **San José:** Matamba (entre Pirrís y San Jerónimo), 13 I 1937, *Brade 1*, CR! F! General Valley, between Canaán and Chirimol, 1000 m, 30 XII 1969, *Burger 7151*, CR! F! U! Vicinity of El General, 825 m, I 1936, *Skutch 2448*, AMES x2! SEL! **PANAMA: Coclé:** North rim of El Valle de Antón, 600-1000 m, 12 II 1939, *Allen 1679*, MO! Loma del Tigre, hills N of El Valle de Antón, 3000 ft, flowered in Gamboa, C. Z. 27 IX 1947, *Allen 5130*, SEL! 7 km N of El Cope, near Rivera Sawmill, 700-850 m, 10 IX 1977, *Folsom 5231*, MO! **COLOMBIA: Meta:** Nebenbach des Río La Cal, Gebiet Rio Guapé-R. Ariari, 600 m, 10 IX 1939, *Renz 3075*, RENZ! **Putumayo:** Expo Manizales, cult. en Colomborquídeas, 1000 m, coll. 1 IV 1994, pressed cult. 18 XI

1996, *Hágsater 11631*, AMO x2! **Tolima:** San Agustín, III 1899, *Spargue s.n.* K! **ECUADOR: Sucumbios:** Lago Agrio to Lumbaqui and Puerto Libre, 600 m, 14 IX 2004, *Hirtz 9047*, AMO! **Napo:** Reserva Biológica Jatum Sacha, 8 km de Puerto Misahualli; margen derecha del Río Napo, 4 IX 1987, *Ceron 2113*, QCNE! Gatun Sacha, east of the Río Napo opposite Misahuali, 450 m, 30 X 1987, *Dodson 17314*, MO! Cruz near Río Misahualli and Río Napo, 450 m, I-IV 1987, *Suárez 38*, RPSC! **Zamora-Chinchipe:** Loja to Zamora, hort. RPSC, 1500 m, pressed cult. 15 II 1993, *Hágsater 10846*, AMO! (Illustration voucher). **PERU: San Martín:** Jepelacio, near Moyobamba, ca. 1100 m, VI 1934, *Klug 3675*, AMES! F! K! NY! US! S! SEL! Tarapoto, San Juan de Pacaizapa, km 72 carretera Tarapoto-Moyobamba, 1000-1050 m, 8 VI 1977, *Schunke 9663*, AMES MO! NY! U! **Huánuco:** Leoncio Prado, near Tingo Maria on Hacienda of Pepe Prato, 1400-1500 m, *Bennett Jr. 1206*, xerox of illustration, AMO! **Junín:** Valley of Río Tulumayo, ca. 10 km S of San Ramón, 800-900 m, 8 VI 1977, *Gentry 41537*, MO! USM! La Merced, ca. 700 m, 20 V 1929, *Killip 23739*, AMES! F! NY! US! **Ayacucho:** Estrella, between Huanta and Río Apurimac, ca. 500 m, 8 V 1929, *Killip 23066*, AMES! US!

OTHER RECORDS: Without data, illustration, SEL 9600! **COSTA RICA:** Without locality data, flowered in cultivation at Jardín Botánico Lankester, 22 II 2003, *Pupulin 4310*, color photo, in F. Pupulin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1: 292, San José, C.R.; **Puntarenas:** La Unión, Cantón de Osa, 5 III 1936, *Lankester 1393*, photo, AMES 42078! Paso del Río Coto, II 1897, *Pittier 11191*, illustration, AMES! **PANAMA: Chiriquí:** Without locality data, XI 1880, illustration of flower, *Pfau 68*, W! **COLOMBIA:** Without locality data, cult. in Colomborquídeas, photographed by J. F. Posada, color photo published at Orquídeas Nativas de Colombia vol. 5, suppl. pg. 766, photo 892; **Chocó:** Bahía Solano, 100 m, *Misas 50*, xerox of illustration, AMO! **ECUADOR: Sucumbios:** Lago Agrio to Lumbaqui and Puerto Libre, 600 m, 14 IX 2004, *Hirtz 9047*, spirit, AMO! **Napo:** Río Misahualli, cult. at Río Palenque, 4 I 1968, *Dodson sub Hágsater 9783*, spirit and slide, AMO! **PERÚ: Huánuco:** Tingo María-Huanuco, *Rauh 23999 sub Hágsater 6887*, slide, AMO!

EPIDENDRUM CRISTATUM Ruiz & Pavón Plate 1115

OTHER SPECIMENS: Without collector and locality data, *3551*, W! Without data, W 29880! Ibid. *Pavón 1805*, W! Without locality data, 3 X 1904, *Pope s.n.*, AMES! Without collector data, Hort. Jardín Bot. de Genève, G! Without locality data, pressed cult. 4 VII 1977, *Ackerman 985*, SEL! Ibid. pressed cult. 9 VI 1976, *Kennedy s.n.*, SEL 14729! Ibid. 3 X 1904, *Pope s.n.*, AMES x2! Ibid. *Martens s.n.*, BR! Santa Catharina, Sierre du Rivage, Without collector data, G x2! Hort. Serre de la Pierrière, Chambesy, Genève, G! Santa Elena, *Basin s.n.*, AMES x2! **MÉXICO:** Without locality data, *Cogniaux s.n.*, G! Ibid. *Linden 1275*, W! Ibid. *Meisner 1419*, AMES! Ibid. *Sessé & Moçiño 4353*, MA! **Tamaulipas:** Rancho del Cielo (property of Frank Harrison), WNW of Gómez Farías, 1000-1200 m, 30 III 1960, *Burger 31*, F! Ibid. 3 IV 1960, *Burger 52*, F! Ibid. 8 VII 1957, *Dressler 1826*, US! arriba de Gómez Farías, 800 m, 2 V 1967, *Gómez-Pompa 2052*, AMES! MEXU! 55 mi S of Ciudad Victoria, 200 m, 1 VIII 1948, *Meyer 2868*, AMES! BR! G! **San Luis Potosí:** al oriente del Xilitla sobre brecha vieja, coll. 1964, pressed cult. 8 V 1977, *Hágsater 2576*, AMO x3! (Illustration) QCNE! Ibid. 4 V 1980, *Hágsater 2576*, AMO x7! **Querétaro:** Jalpan, 3-4 km al Norte de La Parada, 1200 m, 12 IX 1990, *Servín 494*, AMO! IEB x4 Jalpan de Serra, Cerro El Pilón, ca. 3 km al S de La Parada, 1100 m, 13 IX 1997, *Zamudio 10515*, AMO! **Veracruz:** Orizaba, *Botteri 896*, AMES! Ibid. *Botteri 1499*, P x3! Orizaba, *Bourgeau s.n.*, P! Valle de Córdova, 6 V 1866, *Bourgeau 2471*, G, P x2! Region de Orizaba, VI 1866, *Bourgeau 2580*, AMES! P! Ibid. 30 VI 1866, *Bourgeau 7580*, P! Parque de la Flora y Fauna Silvestre Tropical, Universidad de Veracruz, 520 m, 16 II 1993, *Carmona 33*, AMO! Fortín, 24 VI 1985, *Hágsater 5903*, AMO! San Andrés Tuxtla, Estación de Biología Tropical Los Tuxtlas, 200 m, 23 VI 1984, *Ibarra 1762*, AMO! MEXU! Cerro San Miguel 2 km al oeste de Orizaba, 1300 m, 28 VII 1971, *Nevling 2278*, ENCB! MEXU! NY! Region of Jalapa, 1 VII 1931, *Oestlund 2717*, AMES, MO! S! US! Jalapa, ca. 1000 m, 2 VII 1932, *Oestlund 5726*, AMES! Orizaba, 1904, *Purpus 39*, BR! Ibid. V 1905, *Purpus 1360*, AMES! UC! Zacuapan, I 1913, *Purpus 6453*, UC! (specimen mounted of the left) Ibid. V 1907, *Purpus 7694*, MO! UC! North Zacuapan, Rancho La Palmilla, V 1933, *Purpus 16277*, AMES! Emiliano Zapata, a 16 km al SE de Xalapa, 23 V 1976, *Ramos 399*, CAS! MEXU! San Andrés Tuxtla, Laguna Escondida, ca. 200 m, 8 XII 1984, *Salazar 289*, XAL! Ibid. XII 1984, *Salazar 642*, AMO! BR! MO! US! Ibid. 20 V 1985, *Salazar 651*, MEXU! Ibid. *Salazar 652*, AMO! Ibid. 27 XI 1985, *Salazar 1730*, AMO! Orizaba, *Schlumberger 1419*, BR! W! San Andrés Tuxtla, Laguna Escondida, 200 m, 13 VII 1985, *Sinaca 132*, AMO! Hidalgotitlán, km 7 del Campamento Hermanos Cedillo, 150 m, 8 III 1974, *Valdivia 55*, XAL x2! Jilotepec, La Concepción, 1000 m, 9 V 1980, *Ventura 17138*, AMO! ENCB! XAL! Minatitlán, Río Uxpanapa, 180 m, 27 IX 1980, *Wendt 2768*, CHAPA! CAS! MEXU! Minatitlán, Orillas del Río Grande, 90 m, 29 XI 1981, *Wendt 3531*, CHAPA! Hidalgotitlán, Río Soloxuchil entre Hermanos Cedillo y La Escuadra, 150 m, 9 XI 1974, *Vázquez 1371*, MEXU! XAL! **Guerrero:** Camino Atoyac-El Gallo, arriba de Paraíso, km 54, coll. 30 XII 1976, pressed cult. 18 V 1980, *Hágsater 4763*, AMO! Ibid. 21 VI 1985, *Hágsater 4763*, AMO x2! Ibid. 26 V 1987, *Hágsater 4763*, AMO! Ibid. 18 V 1998, *Hágsater 4763*, AMO x2! El Paraíso, coll. 22 XII 1990, pressed cult. 8 IV 1991, *Leleu s.n.*, AMO! Ibid. 17 IV 1991, *Leleu s.n.*, AMO! **Oaxaca:** Totontepec, coll. 8 V 1977, pressed cult. 25 V 1980, *Suárez sub Hágsater 5184*, AMO x2! Ibid. 24 VII 1985, *Suárez sub Hágsater 5184*, AMO x2! Ibid. 11 V 1991, *Suárez sub Hágsater 5184*, AMO x2! Teotitlán, Barranca "La Regadera", Huahutla de Jiménez, 800 m, 6 VII 1939, *Schultes 799*, AMES x2! km 2 Jalapa de Diaz-Agustin, 900 ft, coll. 7 XI 1977, pressed cult. 15 VIII 1980, *Thurston T-1930*, AMO x8! QCNE! **Chiapas:** Without locality data, *Rosillo de Velasco 6*, AMO! S of Palenque on the road to Ocosingo, 300 m, 23 XI 1972, *Breedlove 29763*, CAS! Palenque-Ocosingo, junction of road to Yajalón, 1060 m, collected IV 1978, pressed cult. 27 VI 1983, *Hágsater 5590*, AMO! Ibid. 20 VI 1985, *Hágsater 5590*, AMO x2! Ibid. 1 V 1988, *Hágsater 5590*, AMO! Campamento COFOLASA a 24 km al SE de el Crucero Corozal, sobre el camino Palenque Boca Lacantum, 220 m, *Martínez 9228*, AMO! 21 km al O de Tuxtla Gutierréz, camino a Ocozocoautla, 1030 m, 31 V 1987, *Martínez M-21476*, MEXU! Tenejapa, Río Cruz Pilal, 900 m, 2 V 1982, *Méndez 4252*, AMO! Palenque, Misolja, 250 m, 30 XI 1982, *Méndez 5119*, AMO x3! Tenejapa, Río Cruz Pilal, 800 m, 21 IV 1983, *Méndez 5887*, MEXU x6! Cerros NE Rancho Ocote (30 km NO Ocozocuzutla), 29 V 1950, *Miranda 6324*, MEXU x2! Las Vistas beyond Berriozabal, 30 IV 1952, *Moore 6328*, UC! Hotel Model in garden, Comitán, 1953, *Oberg 78*, SEL! Laguna Ocotalito, entre Metzabok y Monte Líbano, 950 m, 16 VI 1986 16 VI 1986, *Soto 2738*, AMO! km 13.2 del camino Las Margaritas-Cruz de Rosario, 1550 m, 29 III 1997, *Soto 8153*, AMO! **Tabasco:** Teapa, 1840, *Linden s.n.*, G! Ibid. *Linden 1216*, W! **Campeche:** Calakmul, Narciso Mendoza, 240 m, 8 VII 1997, *Alvarez 202-A*, MEXU! Hopelchén, Calakmul, Jardín Botánico de Zoh-Laguna, sobre el camino a Dzibalchén, 200 m, 2 VII 1996, *Alvaro 328*, MEXU! 4-5 km antes de llegar a Xpujil, alrededor de las ruinas de Becan, 220 m, *Flores-Castorena 759*, AMO! Calakmul, a 1 km al W de Campamento Costa Maya, 300 m, 10 V 1998, *Martínez 30800*, MO! **Quintana Roo:** a 12 km al Sur de San Jose de la Montaña, sobre el camino a Tomas Garrido, 13 VII 1983, *Cabrera 5145*, MEXU Othón P. Blanco, Bajo de Sabana, a 4 km de Tres Garantías, 50 m, coll. 14 VII 1998, pressed cult. 13 VI 2000, *Ibarra 46 sub Hágsater 12100*, AMO x2! **Yucatán:** 26 VII 1985, *Andrews s.n.*, AMO! **GUATEMALA: Alta Verapaz:** near Río Sebol, 1 VIII 1964, *Contreras 5398*, LL! Vicinity of Chamá, 900 ft, 26 VII 1926, *Johnson*

423, AMES! US! **Izabal:** near Entre Ríos, 12 I 1931, *Lewis 52*, AMES! Creeke Lagarto, Ensenada de Los Lagartos; El Estor, 2 m, 16 VII 1988, *Martínez 22805*, MEXU! MO! Near Puerto Barrios, *Ward 7*, AMES! **Petén:** Tikal National Park, Tikal growing on top of temple in "H" group, 16 X 1959, *Contreras 286*, DH! LL x3! Tikal National Park, Tikal on top of temple in "H" group, 7 VI 1960, *Contreras 1043*, LL x2! MEXU! S! **BELIZE: Cohune Ridge**: El Cayo, VI-VIII 1936, *Lundell 6447*, AMES! MICH! **Toledo:** In high ridge, on hill top near boundry linr, beyond Central Camp, Edwards Road beyond Columbia, 21 V 1951, *Gentle 7342*, LL! **HONDURAS: Comayagua:** Minas de Oro, San Luis, 4000 ft, 16 VI 1932, *Edwards 181*, AMES x2! Siguatepeque, 3700 ft, 21 I 1933, *Edwards 355*, AMES! San Luis, 2500 ft, 3 V 1933, *Edwards 409*, AMES x2! **Cortés:** El Jaral, Lake Yojoa, 2000 ft, 24 X 1932, *Edwards 296*, AMES x2! SEL! **Atlántida:** Laguna Tinta, 23 III 1923, *Ames s.n.* AMES 36943! **NICARAGUA: Jinotega:** Río Cua, 30 m, *Heller 1951,* SEL **Zelaya:** Cerro Waylawas, 100-268 m, 4 V 1978, *Stevens 8763*, MO! **COSTA RICA:** Without locality and collector data, *3550*, W 4797! Hort. Jardín Lankester, 27 VIII 1972, *L. Rodríguez 1383*, testigo dibujo #778, USJ! **Cartago:** Turrialba, 600 m, VIII 1909, *Brade 1281*, AMES! above La Suiza, 15 VII 1977, *DeWolf 760*, AMES! Peralta, V 1925, *Lankester 987,* AMES x3! Río Turrialba, 500 m, 1 III 1896, *Smith 6791*, AMES x3! BR! US x2! Orosí, 1200 m, I 1938, *Valerio 2626*, AMES! **Guanacaste:** Naranjos Agrios, 600-700 m, 29 I 1926, *Standley 46423*, AMES! US! **PANAMA: Chiriquí:** Collected in western Panamá, Rubber tree station, 12 VIII 1923, *Stork 115*, AMES! **COLOMBIA: Cauca:** 900 m, 18 III 1883, *Lehmann 2743*, G x2! **[Norte de Santander:]** Ocaña, *Engel s.n.*, BR! **Valle del Cauca:** Las Juntas del Dagua, 8 VII 1898, *Lehmann 276*, AMES! K! L! Las Juntas du Río Dagua, 300-1000 m, *Lehmann 277*, AMES! G x2! K! L! NY! W! Cordillera Central, cañadas del Río Agua-Clara, Canta Claro, cercanías de Palmira, 25 X 1962, *López 8098*, US x2! "La Cascada",carretera Cali-Buenaventura, km 68, ca. 730 m, 19 VI 1961, *Ortíz Valdivieso 227*, HPUJ! **ECUADOR: Loja:** Alamor-Puyango Road, km 20, ca. 500 m, 2 IV 1980, *Harling 17788*, GB! Loja, 2200 m, *Vivar 1264*, LOJA! **Morona-Santiago:** Road Gualaquiza-Nueva Tarqui, at bridge over Río Cuchupamba, 900 m, 18 IV 1985, *Harling 24290*, GB! **Zamora-Chinchipe:** River Zamora, from Zamora to Yansasa [Yantzaza], 1100 m, 26 VI 1960, *Dodson 170 A*, SEL! Ibid. *Dodson 170 b*, SEL! Ibid. *Dodson 170 C*, SEL! River Zamora, from km 40 to 51 road Loja-Zamora, 1600 m, *Dodson 175*, SEL! **PERU:** Without locality and colector data, *84*, W 4145! **Amazonas:** Chachapoyas, camino entre Chachapoyas y Cheto, *Raimondi 1778*, USM! **Cajamarca:** San Ignacio, Namballe, Caserío Las Abejas, 690-870 m, 7 VII 1997, *Campos 4086*, MO x2! USM! **Junín:** quebrada del Río Yurinaqui, Bajo Yurinaqui, 23 X 1982, *Fernández 153*, USM! subiendo a la mina Pichita-Caluga, cerca de San Ramón, 25 X 1982, *Fernández 161*, USM! "El Refugio" San Ramón, procedente de Pampasilva, 800 m, 8 X 1984, *Fernández 608*, USM! **Madre de Dios:** Tambopata, Distrito Las Piedras, Río amiguillos, 309 m, 22 III 2001, *Beltrán 3895*, USM! **BOLIVIA: Beni:** Dry creekbed near, *Balée 5090*, MO! Trinidad-Missiones Guarayos, ca. 250 m, IX 1926, *Werdermann 2590*, MO! S! **[La Paz:]** Amazon Basin [Bopi Gorge], 3000 ft, 9 IX 1921, *Rusby 560*, AMES x2! Ibid. *Rusby 585*, AMES x2! Ibid. *White s.n.*, AMES 25476! Ibid. *White 279*, AMES! Amazon Basin, [Rurrenabaque], 900-1000 m, 10 VIII 1921, *White 879*, AMES x2! Amazon Basin, 27 VI 1921, *White 904*, AMES x3! Ibid. *White 2413*, AMES! **BRAZIL:** Without locality data, *Glaziou 1149*, P! Tapera, Ribeirao, 200 m,20 I 1971, *Bresolin 129*, HB! São Sebastião, Praia da Jureia, *Brolio s.n.*, SP! **Bahía:** prox. Ibicoara, 1050 m, 24 III 1980, *Anaigo 282*, RB! Brumado, 19 X 1979, *Seidel 1256*, HB! Altamira (PA), Río Xingu, Ilha Belo-Horizonte, 13 x 1986, *Souza 313*, MG! **[Espirito Santo**:] Domingos Martins, 550-800 m, 23 XII 1970, *Kautsky 322*, HB! Espirito Santo, 12 I 1937, *Mazzini 1*, SP! **Minas Gerais:** Cornelio Alves, *Carriz 1234*, RB! Estaçao Experimental de Agua Limpia, Gal. Pacheco, 18 II 1968, *Guare s.n.*, HB! Morro do Quilombo, pr. Cruzilia sul de Minas, 23 XII 1957, *Pereira s.n.*, HB! Brasilia, Caldas, *Regnell 1149*, BM! MO! US! W! Caldas, *Regnell III 1149*, S x4! **Río de Janeiro:** Sarangeias, 220 m, 22 XII 1878, *Glaziou 11619*, P! Praia de Leste-Balneario Beltrame, *Leinig 510*, HB! **Pará:** 100 km south of Rendencao on road (PA-150) to Barreiras dos Campos, 210 m, 18 II 1980, *Plowman 8845*, MG! **Paraná:** Jaguariahyva, 16 III 1911, *Dusén 11554*, NY! Jacarehy, 20 II 1914, *Dusén 14558*, NY! Turvo, 12 II 1960, *Hatschbach 6786*, HB! Maringá, Orto Florestal, 7 XII 1965, *Hatschbach 13234*, U! Barra Río Bom Succeso, 24 I 1974, *Hatschbach 33753*, HB! Z! **Santa Catarina:** Blumenau, *Spannagel 210*, SP! **São Paulo:** Mattha, *Cogniaux 2867*, BR! São Carlos, Fazenda Canchim, *Eiten s.n.*, SP! Cult. em São Paulo, 23 III 1928, *Hoehne s.n.*, SP! São Paulo, Capital, 23 III 1928, *Hoehne 22399*, NY! Cult. in São Vicente, 18 X 1928, *Marques s.n.*, SP! Serra de Caraos, *Mason 1701*, S x2! Cult. em Amparo, 18 XII 1926, *Recch s.n.*, SP! Santos, Río Buturaca, *Regnell 2955*, S! Litoral, Playa Boraceia, 10 m, *Paiva Castro 10161*, AMO! **VENEZUELA:** Vicinity of Cristobal Colón, 5 I 1923, *Broadway 351*, AMES! US! **Anzoátegui:** Along Río Leon by Quebrada Danta tributrary to Río Neveri, northeast of Bergantin, 500 m, 21 II 1945, *Steyermark 61068*, AMES! F! G! **Bolivar:** E of Miamo, leading to Hato de Nuria, 500-600 m, 16 I 1961, *Steyermark 88524*, K! NY! RB! U! US! Headwaters and upper part of Quebrada Caballape, W of Hato de Nuria, E. of Miamo, Altiplanicie de Nuria, 230-350 m, 21 I 1961, *Steyermark 88670*, NY! S! **[Distrito Federal:]** Caracas, *Otto 521*, W 4148! Caracas, *Wagner s.n.*, G! W 4146! **Falcón:** Sierra de San Luis, arriba de Sta. María, 1100 m, 5 VII 1979, *van der Werff 3600*, U! **Mérida:** Umgebung von Torondoy, Quebrada Garapata, 1200 m, 15 XII 1948, *Renz 5005*, RENZ! **Monagas:** Caripe, *Funk 244*, P x2! (Illustration voucher) **Sucre:** Umgebung um Sabana de Piedras zwischen Caripe und Santa María, bei Tierra Blanca, 2 km NW von Sabana de Piedras, ca. 1000 m, 12 XII 1958, *Renz 9216*, RENZ! **SURINAM: Saramacca:** Nature Reserve Raleighfalls/Voltzberg, 11 IX 1973, *Teunissen 1326*, U x2! **TRINIDAD:** Without locality data, Trinidad Botanic Garden, 1888, *Hart s.n.*, K! Ibid. *Hart 3669*, US! Ibid. 6 X 1918, *Broadway s.n.*, NY! North coast district, VIII 1931, *Broadway s.n.*, BM! Sant d'Eau, 16 II 1931, *Broadway s.n.*, BM! Maraval, 1911, *Broadway 3970*, AMES! K! Upper Saracreek, between Allamonie and Stonekampoe, 14 XI 1950, *Florschütz 236*, U! Brasse Seco, 5 IX 1984, *Kenny 29045*, MO x2! U!

OTHER RECORDS: Without data, illustration of lip, W 5805! Ibid. *Salvador Rosillo de Velasco s.n.*, spirit, AMO! **MEXICO: Guerrero:** Paraíso, *Hágsater 10933*, spirit, AMO! **Chiapas:** Without locality, 1 V 2000, *Cisco s.n.*, digital photo, AMO! km 19, El Sumidero, 3600 ft, 26 I 1963, *Pollard s.n.*, photos and flower cards in Pollard notes, AMO! Teopisca, 31 III 2003, *Leleu s.n.*, illustration and flower card and spirit, AMO! Ibid. *Salvador Rosillo de Velasco 59*, spirit, AMO! Bonampak, 350 m, *Soto s.n.*, spirit, AMO! km 13.2 del camino Las Margaritas-Cruz de Rosario, 1550 m, 29 III 1997, *Soto 8153*, color photo, in M. Soto et al., 2007, Orchids of México, Digital Catalogue: fig. 0398, México, Instituto Chinoín. **Veracruz:** Region de Orizaba, VI 1866, *Bourgeau 2580*, illustration flower, AMES! Fortín de las Flores, *Leleu s.n.*, spirit, AMO! **Yucatán:** Without locality data, *Andrews s.n.*, spirit, AMO! **GUATEMALA: Izabal:** near Entre Ríos, ca. 15 ft, *Ward 52*, note and lip illustration, AMES! **NICARAGUA: Jinotega:** Río Cua, 30 m, *Heller 1951,* xerox of illustration, AMO! SEL **COLOMBIA:** Without locality data, cultivated and photographed by *G. Escobar 1255*, color photo published at Orquídeas Nativas de Colombia vol. 5, suplemento, photo 885,p. 763; **Antioquia:** Itoango, 1500 m, VIII 1978, *Escobar 1053*, slide, AMO! **Valle del Cauca:** "La Cascada",carretera Cali-Buenaventura, km 68, ca. 730 m, 19 VI 1961, *Ortíz Valdivieso 227*, slide and xerox of illustration, HPUJ! **VENEZUELA:** Sta. Elena, Morro da Cordilheira Paracaima, próximo ao morro Guaramasen, 800 m, 14 IX 1979, *Rosa 3425*, MG! **Monagas:** Caripe, *Dunsterville 297*, note published in Flora de Venezuela, Vol. 15, AMO! xerox K! **ECUADOR:** Without locality data,

Andreetta s.n., slide color, AMO! Ibid. *Hirtz s.n.*, slide color, AMO! **PERU: Amazonas:** Bagua, below Ingenio, 1100 m, 1964, *Hutchison s.n.*, note, UC! **Pasco:** Oxapampa, Cacazu, several km below the town, 1000 m, VIII 1988, *Bennett 4503*, xerox of illustation, USM! **Junin:** Río Perene, below Boca del Tigre, 550 m, *Bennett 709*, note, MO! **BRAZIL:** Berlice River, illustration, W 33640! **São Paulo:** Litoral, Playa Boraceia, 10 m, *Paiva Castro 10161*, spirit and illustration, AMO! **Santa Catarina:** São Bento, I 1914, *Lutz 626*, note and photo published in Orquídea: vol. 3-4: 74, 1941. **GUYANA:** Canje Creek Beibrie, *Barkly s.n.*, water color, K!

EPIDENDRUM DIFFUSUM Sw. Plate 1118

OTHER SPECIMENS: Without locality, 24 VIII 1904, *Ames s.n.*, AMES! Ibid. *Botteri s.n.*, W! Ibid. *Holman 478*, SEL! Ibid. *Jameson s.n.*, S! Ibid. *Rechenger 528*, W! Ibid. *Sandeman s.n.* W! Ibid. *Varichy s.n.*, W! Ibid. *Wullschlangel s.n.*, W! West Indies, without locality, *Bateman s.n.*, W! **MEXICO:** Without locality, 1 VII 1941, *Baillon 1873*, P! Ibid. 6 III 1901, *Dewall s.n.*, AMES! Ibid. 19 VII 1986, *Hágsater 6173*, AMO! Ibid. V 1841, *Liebmann 6832*, M! US! Ibid. McDowell s.n., AMES! Ibid. *Meisner 1410*, AMES! Ibid. *Pavón s.n.*, G x2! Ibid. *Pavón 20-1*, G! Ibid. *Schlumberger 1853*, NY! Ibid. *Sessé & Mociño 4303*, F! MA Temperirtes México, *Leibold 44*, W! Hacienda de La Laguna, *Schiede 13*, W x3! **Veracruz:** Without locality, *Oestlund 4945*, BM! Ibid. ca. 1000 m, 26 VIII 1935, *Yoshida 4945*, AMES! Coatepec, Cerro de Las Palmas entre Jalcomulco y Tuzamapan, 800 m, 1 IV 1979, *Castillo 499*, MEXU! XAL! Catemaco Parque de la Flora y Fauna Silvestre Tropical, Universidad de Veracruz, 500 m, 6 VI 1994, *Carmona 158*, AMO! San Andrés Tuxtla Near Los Mangos, S. E. of Catemaco, 10 VIII 1953, *Dressler 111*, AMES! BM! F! MEXU! MICH! NY! UC! US! Arriba de San Fernando, 650 m, 14 V 1970, *Gomez-Pompa 4849*, MEXU! km 38 Conejos-Huatusco, 25 IX 1984, *Hágsater 1691*, AMO x3! Xalapa-Totutla, km 23-24, 800 m, 8 VIII 1984, *Hágsater 6101*, AMO x5! Mirador, VIII 1841, *Hahn 19.B*, W! Amatlán de los Reyes en el rancho Chilpanapa, camino hacia Villa Libertad, 650 m, 13 IX 1990, *Huerta 56*, CORU! Found near Lake Catemaco, 1000 ft, 1 X 1953, *Johnson 153-10*, SEL! El Mirador, VIII 1841, *Liebman 19B*, AMES! G x2! Mirador, 1838, *Linden 34*, W! Oriazaba, *Muller 7387*, W! Near Mirador, ca. 900 m, 12 II 1932, *Nagel 1198*, AMES! BM! Near Rodríguez Clara, 300 m, 1 V 1937, *Nagel 5762*, AMES! Totutla, Near Mirador, Zacuapan, 900 m, 1 II 1932, *Oestlund 1198*, MEXU! Near power plant, Huazuntlán, NW of Minatitlán, ca. 500 m, 13 VIII 1935, *Oestlund 3822*, S! Mirador, *Pavón s.n.*, W 49668! Near Zacuapan, 1 VIII 1906, *Purpus 2133*, AMES! F! NY! UC x3! US! Near Zacuapan, ca. 900 m, 1 VI 1934, *Purpus 3894*, AMES! Zacuapan, Barranca de Tenampa, *Purpus 5984*, UC! Barranca de Zacualpan, V 1919, *Purpus 8289*, DH! Zacuapam, *Purpus 10805*, AMES! DH! F! SEL! US! Zacuapan, 1 V 1933, *Purpus 16285*, AMES! Near Power Plant, Huazuntlán, NW of Minatitlán, ca. 500 m, 20 X 1934, *Richards 3822*, AMES! Amatlán de los Reyes Camino Santa Ana-Caldera del diablo, 700 m, 23 I 1993, *Sánchez 278*, AMO! Along banks of Rio Seco, near Cordova, IX 1940, *Sawyer 213*, F! Jalapa-Veracruz highway 4 km N of Dos Rios, 10 VII 1974, *Sohmer 9344*, MEXU! A 2 km al E de El Encinal, 37 km de Conejos-Huatusco, 870 m, 9 IX 1966, *Sousa 2724*, MEXU! A 1.5 km al S de El Encinal, 210 m, 30 VIII 1967, *Sousa 3212*, AMO! ENCB! MEXU! MO! Hidalgotitlán, a 6 km del Campamento Hnos. Cedillo hacia la Laguna, 156 m, 12 VIII 1974, *Valdivia 1437*, XAL! Totutla, 760 m, 23 VIII 1971, *Ventura 4130*, CAS! ENCB! LL! MICH! Dos Rios, Lancero, 850 m, 23 I 1975, *Ventura 10830*, AMO! ENCB! MEXU! Ixhuacán Arenal, 1300 m, 15 III 1980, *Ventura 16950*, AMO! ENCB! MEXU! XAL! **San Luis Potosí:** Tamasopo, aprox. 4 km al N de Tamasopo, sobre la carretera a Tambaca, Lago Los Pretiles, 500 m, *Cervantes 278*, AMO! Tamazunchale 2 miles east of Tamazunchale, on north side of river, 250 ft, 24 VII 1940, *Hitchock 7298*, US! Mts. NW of Tamasapo, 700 m, 14 IX 1935, *Nagel 4802*, AMES! Along banks of Rio Moctezuma, 125 m, VIII 1952, *Sawyer 8045*, F! **Querétaro:** Jalpan, al N de Tanchanaquito, punto Barranca Grande, 500 m, 15 VII 1993, *López 682*, IEB! Jalpan, al oriente de Tanchanaquito, arriba de La Joya Honda, 480 m, 5 VIII 1993, *López 700*, AMO! IEB! **Hidalgo:** Pisaflores, 3 IX 1978, *Hágsater 5395*, AMO! ENCB! **Oaxaca:** Cuicatlán de Cuyamecalesa, Santa Ana, 1500 m, 23 VI 1909, *Conzatti 2374*, AMES! F! Talea, VIII 1844, *Galeotti s.n.*, W! Oaxaca, 4000 ft, *Galeotti 5234*, BR x3! G! P x2! W x3! Totontepec, pressed cult. 17 VIII 1981, *Hágsater 5185*, AMO x2! Ibid. pressed cult. 25 VII 1985, AMO x3! Ibid. pressed cult. 22 IX 1989, AMO x9! 12 Santa María Chimalapa, en la cresta S del cañón del Río del Corte, ca. 4 km al N de Sta. María cerca de la vereda al Paso de la Cueva, 320 m, 29 VIII 1984, *Hernández 378*, AMO! MEXU! Mogoñe trail Salina Cruz-Puerto Mexico, towards Vista Hermosa, 93 m, 11 VI 1934, *Knape 3846*, AMES! Comaltepec a Trapiche de la Concepción, 1000 m, *Liebmann s.n.*, W! Tuxtepec: Chiltepec and vicinity, 20 m, VII 1940, *Martínez 190*, F! LL! MEXU! SEL! UC! Near Totontepec, 5500-3700 ft, 15 VII 1928, *Nelson 833*, AMES! US! Santa María Chimalapa, S del cañón del Río del Corte, ca. 4 km al N de Santa María, 325 m, *Rocha 313*, AMO! Barranca of Hin-du-da-ge, San Antonio Eloxochitlán, 24 VII 1938, *Schultes 267*, AMES! Barranca de San Antonio Eloxochitlán, 28 VII 1938, *Schultes 345*, AMES! Finca Unión Francesa, 900 m, 28 VI 1939, *Schultes 737*, AMES x2! Ibid. 850 m, 28 VI 1939, *Schultes 760A*, AMES! Teotitlán, Barranca San Antonio Eloxochitlán, 1100 m, 5 VII 1939, *Schultes 784*, AMES! **Chiapas:** Lagos de Monte Bello, along the streets or in the sitios of San Cristobal de las Casas, 2200 m, 18 VIII 1974, *Breedlove 36526*, DH! Ocosingo, 3 IX 1986, *Christenson 1566*, SEL! Ocosingo Limestone area, near Laguna Ocotal Grande, ca 24-30 km southeast of Monte (Cerro) Libano (which is ca 45 km E of Ocosingo), ca. 950 m, 20 VII 1954, *Dressler 1524*, AMES! MEXU! MICH! NY! US! Ocosocuautla-Villa Flores, Km 30, Finca "Las Flores", 30 XII 1970, *Hágsater 1242*, AMO x8! Ocosingo A 10 Km. al SE de Crucero Corozal camino a Boca Lacantúm, 200 m, 18 VIII 1984, *Martínez 7450*, MEXU! Ocosingo 4 Km. al SE de Nuevo Guerrero, camino a Boca Lacantúm, 560 m, 24 I 1986, *Martínez 16746*, CICY! MEXU x2! MO! Escuintla, 3 VII 1937, *Matuda 28547*, MEXU! Laguna Ocotal, 1 I 1954, *Oberg 117*, SEL! Ibid. 950 m, *Oberg 131*, SEL! Ibid. *Oberg 146*, HB! **Quintana Roo:** Othón P. Blanco, Ejido Tres Garantías, carretera a Dos Aguadas km 6, cerca de una aguada, 12 IV 1999, *Ibarra 109*, AMO! **CUBA:** Without locality, I 1879, *Wright 76*, P! Ibid. I 1860, *Wright 3325*, AMES! G! HAC! MO! S! Las Villas, Pico Potrerillo, Trinidad, L. V., 10 V 1940, *Acuña s.n.*, HAJB! Loma del Gato, Sierra del Cobre, IX 1935, *Acuña 13889*, HAC! Santa Clara, Arroyo Trinitario, Rio Negro, Trinidad Mountains, 550 m, 7 III 1910, *Britton 5173*, AMES! 8 km south of Cumanayagua; 5 VII 1953, cult. XII 1954, *Dressler 1305*, UC! La Perla Oriente, 600-660 m, 6 II 1911, *Shafer 8649*, AMES! Cuba Orientali, Cayo del Rey, I 1864, *Wright 8*, W! **Guantánamo:** Imías, Vega del Lobo, 500-700 m, 27 VII 1984, *Álvarez 55025*, HAJB x2! Monteverde, Parallón, "La Perla", 28 XII 1960, *López 2428*, HAJB! Monte Verde, *Wright 76*, W! Cuba Oriental Prope, piton Monte Toro, I 1861, *Wright 88*, W! Cuba Orientali prope, Monte Verde, I 1860, *Wright 222*, W! Orientali, I 1860, *Wright 616*, W! **JAMAICA:** Without locality, I 1905, *Cameron s.n.*, AMES! Ibid. [Moris] *J. P. 30*, W! Parish of St. Andrews, half way between St. Peters and Silver Hill, 3000 ft, 3 VII 1966, *Anderson 3015*, AMES! Mandeville and Vicinity, 29 VIII 1907, *Britton 1017*, NY! Ringobon, 200 m, 24 IX 1881, *Lehmann 884*, G! W! Mt. Diablo, south of Moneage, 830 m, 11 XI 1985, *Luer 11483*, MO! Green River, 3000 ft, 22 VII 1903, *Nichols 132*, AMES! MO! US! Farm Hill, 14 X 1927, *Orcutt 3421*, G! MO! Ibid. *Orcutt 3431*, AMES! Ibid. 24 X 1927, *Orcutt 3608*, US! 1.5 miles ca of Hope Bay, Jamaica, W.I, 26 II 1906, *Wight 137*, AMES! Ibid. *Wight 139*, AMES! Bethabara, VIII 1847, *Wolle s.n.*, CM! Bethany, X 1847, *Wolle s.n.*, CM x2! **Cornwall:** The Cockpit Country, Trelawny Cockpit Country, 13 IX 1906, *Britton 468*, AMES! Ibid. *Britton 924*, AMES!

Trelawny Island View Hill, Wilson Valley, 1.5 miles north of Warsop, 2000-2200 ft, 10 IX 1960, *Proctor 21357*, AMES! **Middlesex:** St. Ann, Cockpit Country, 13 IX 1906, *Britton 456*, AMES! St. Ann, St. Catherine, 0.5 miles southeast of Guys Hill, 1600 ft, 3 V 1952, *Proctor 6656*, US! St. Ann, 1 mile due South of Crescent Park, 1750 ft, 10 XII 1953, *Proctor 13554*, AMES! The Cockpit Country, St. Elizabeth, Ipswich, Cockpit hill south of Village above the railway line, 8 IX 1976, *Whitefoord 1420*, AMES! **Manchester:** 1 mile south of Rudds Corner, ca. 2400 ft, 8 XI 1962, *Proctor 22893*, AMES! **Portland:** Lawrence Bottom to Irlington, 700 m, 21 IX 1960, *Adams 8117*, MO! Portland, Near Windsor Forest, 8 IX 1966, *Read 1726*, US! **Surrey:** The Blue Mountains, St. Andrew, near Cydesdale, I 1911, *Banes s.n.*, AMES! The Blue Mountains, St. Thomas, ca. 3000 ft, 3 VII 1963, *Crosby 436*, AMES! The Blue Mountains, St. Thomas, Mountain trail between House Hill and Cuna Cuna Gap. St. Thomas, 350-725 m, 7 VI 1926, *Maxon 8914*, AMES! Portland Parish of Portland; zwischen Kingston und Buff Bay, Tall der Buff Bay River, zwischen Charles town und Rose Hills, 5 km midlish um Buff Bay, 100 m, 28 I 1961, *Renz 9882*, RENZ! **GUATEMALA:** Without locality, *Bernoulli 725*, W! **Petén:** Tikal National Park, growing on top of Temple IV, 21 VI 1959, *Contreras 99*, LL! Tikal National Park, on top of Temple III, 23 IX 1959, *Contreras 160*, DH! F! LL! MO! NY! S! Tikal National Park, growing on top of Temple in "H" Group, 22 I 1960, *Contreras 488*, LL! Tikal National Park, in ramonal vovering the ruins, 22 II 1960, *Contreras 491*, LL! Tikal National Park, Bajo de Santa Fe, 30 I 1960, *Contreras 541*, F! LL! S! Tikal National Park, Aguada Naranjal in caobal, 28 IX 1960, *Contreras 1497*, LL! Tikal National Park, Bajo de Santa Fe, salida de Arroyo Corriental, in tintal on Aguada Terminos road, 17 I 1964, *Contreras 3850*, LL! Chicbul, La Libertad, 8 IV 1933, *Lundell 2634*, MICH! Tikal National Park, in ramonal covering the ruins, 29 I 1959, *Lundell 15438*, LL! Tikal area, 29 X 1976, *Marden s.n.*, SEL! Parque Nacional de Tikal, ca. 40 m, 23 IX 1969, *Tún 300*, F! Santa Elena, en el camino para Socotzal, 11 XI 1971, *Tún 1919*, F! **Izabal:** Rio Dulce, near Lake Isabal, 200 m, 1 VII 1973, *Hamer 19*, SEL! Entre Ríos, 40 miles from coast, 175 ft, 3 IX 1940, *Lewis 4*, AMES! Río Dulce, 1 m, 27 VII 1988, *Martínez 23126*, MEXU! El Estor, Rio Semuc suroeste, 14 VII 1976, *Pozuelos 3692*, USCG! Ibid. *Pozuelos 3694*, USCG! El Estor, VIII 1994, *Salazar 16*, MEXU! El Estor Lago de Izabal, Ensenada de Los Lagartos, 1 IX1988, *Stevens 25328*, MEXU! MO! Lago Izabal, 11 I 1978, *William s.n.*, SEL! Rio Dulce, between Livingston and 6 miles up river on north side (right hand side going up river), 1-25 m, 14 IV 1940, *Steyermark 39403*, AMES! F! **Huehuetenango:** Chaculá, 1400-1600 m, 5 VIII 1896, *Seler 2320*, AMES! Sierra de los Cuchumatanes, between Ixcan and Finca San Rafael, Sierra de los Cuchumatanes, 200-800 m, 24 VII 1942, *Steyermark 49686*, AMES! F! **HONDURAS: Copán:** Valle de las Ruinas de Copán traida de los alrededores de Copán, cultivada en Tegucigalpa, ca. 1000 m, *Wiese s.n.*, TEFH!

OTHER RECORDS: MEXICO: Hidalgo: Pisaflores, 3 IX 1978, *Hágsater 5395*, Illustration voucher AMO! **BELIZE:** Without locality, *Adams 252*, Illustration of lip in Orchids of Belize fig. 92-K, photo 160. **JAMAICA:** Without locality, *Hágsater 11232*, Illustration AMO! flowers in spirit AMO!

EPIDENDRUM EBURNEUM Rchb.f. Plate 1121

OTHER SPECIMENS: Without locality or collector, W 9366! Ibid. W 9369! **HONDURAS: Gracias a Dios:** Tuas, campamento maderero al O de Brus Laguna, 0 m, 17 IV 1971, *Nelson 980*, MO! **NICARAGUA: Zelaya [Atlántico Sur]:** Silico creek, near Pearl Lagoon, area N of Bluefields, 28 II 1952, *Allen 6523*, DH! N of abandoned airstrip near Alamikamba, ca. 10 m, 11 VII 1982, *Stevens 21733*, MO! Río Punta Gorda, Atlanta, desembocadura del Caño Del Oro en el Río Chiquito, ca. 10 m, 12 XI 1981, *Moreno 12966*, MO! La Barra de Punta Gorda, 0-2 m, 16 XI 1981, *Moreno 13202*, MO! La Barra de Punta Gorda, 0-2 m, 17 XI 1981, *Moreno 13300*, MO! Inlet south of Perla Laguna, 1 to 3 ft above water, 15 IX 1966, *Heller 10013*, F! SEL x2! Río San Juan, Greytown, Caño Negro y Caño Pescado, 5 I 1985, *Rueda 2555*, MO! Estación experimental "El Recreo", ca. 15 m, 8 XI 1984, *Ríos 155*, MO! A lo largo del Río Maíz, 8 I 1995, *Rueda 2650*, MO! **Río San Juan:** San Juan del Norte, Cementerio Inglés de San Juan del Norte, 5 m, 29 XI 1982, *Araquistain 3305*, MO! SEL! San Juan del Norte, Río Indio, Caño La Paloma, 5 m, 1 XII 1982, *Araquistain 3355*, MO! San Juan del Norte, 0 m, 27 III 1971, *Atwood 5254*, AMES! MO! Greytown, Río Indio, entre Greytown y la División de Pimienta y El Indio, 4 I 1995, *Rueda 2513*, MO! **COSTA RICA: Alajuela:** Upala, P.N. Guanacaste, Cordillera de Guanacaste. San Ramón, Dos Ríos de Alajuela, Sendero El Níspero, 550 m, 28 I 1995, *Chavarría 1146*, INB! Upala, Dos Ríos, siguiendo la margen izquierda del Río Cucaracho, 2 km aguas abajo a partir del puente camino a Brasilia, 500 m, 3 XI 1987, *Herrera 1108*, AMO! INB! MO! **Limón:** Pococí R. N. F. S. Barra del Colorado, Sardinas, 15-20 m, 20 X 1993, *Araya 376*, INB! MO! Banks of the Rio Colorado between Isla Buena Vista and Cerro Coronel, 5 m, 15 IX 1986, *Davidse 31237*, CR! MEXU! MO! SEL! Inundated forest at the nothern base on the southwestern-most extension of Cerro Coronel, 5 m, 19 IX 1986, *Davidse 31428*, CR! MEXU! MO! Cerro Coronel, E. of L. Danto, 20-170 m, 16 VI 1986, *Douglas 23918*, CR! MO! Llanuras de San Carlos, 12 XI 1983, *Hágsater 6983*, Illustration voucher, flowers in spirit AMO! Xerox copy ENCB! MEXU! Parque Tortuguero, 600 m, al suroeste de Tortuguero sobre el río, 2 km al oeste sobre tierra, 2 m, 2 XII 1987, *Robles 1432*, MO! Shores of Caño Pereira, 2-4 m, 20 III 1987, *Stevens 25147*, CR! MO! **Heredia:** Cañón del Rio Sarapiquí Finca La Selva, 6 III 1991, *Richardson 56*, CR! Canton de Sarapiqui, Llanura de San Carlos, Puerto Viejo, 100 m, 3 VIII 1990, *Vargas 365*, INB! **PANAMA:** Without locality, 7 VII 1977, *Ackerman 1002*, SEL! Ibid. 29 XII 1918, *Powell 34*, K **Bocas del Toro:** To W of Chiriquí Grande, 0 m, 26 V 1984, *Churchill 5323*, MO! Laguna de Chiriquí and its neighborhood, *Hart 172*, K! US! North coast of Escudo Veraguas Island, 5 m, 8 VIII 1987, *MacPherson 11439*, MO! Almirante, just north of Dos Milla, 20 VIII 1964, *McDaniel 5126*, MO! Water Valley, 18 IX 1940, *Wedel 850*, AMES! MO! US! Water Valley, vicinity of Chiriquí Lagoon, 14 XI 1940, *Wedel 1625*, AMES! BM! US! Old Bank Isl. Vicinity of Chiriquí Lagoon, 22 II 1941, *Wedel 2145*, MO! Little Bocas, Vicinity of Chiriquí Lagoon, 15 VII 1941, *Wedel 2555*, MO! Idib. *Wedel 2556*, AMES! K! John's Creek, vicinity of Chiriquí Lagoon, 26 IX 1941, *Wedel 2766*, AMES! BM! US! **Coclé:** Without locality, Hort. Coronado, pressed cult. 20 XI 1982, *Hágsater 6386*, AMO! Ibid. pressed cult. 2 IV 1984, AMO! **Colón:** Summit of Cerro Santa Rita, 1200-1500 ft, 13 IX 1947, *Allen 5111*, SEL! Chagres River (Venezuela), IX 1889, *O'Brien s.n.*, K! Near Colón, *Powell 38*, AMES x2! BM! K! Gatun Lake Region, 0 m, *Powell 132*, AMES! K x2! Near Colon in swamp, *Powell 3461*, AMES! Ibid. *Powell 3462*, AMES! **Panamá:** Fort Randolph, Canal Zone, 1 IX 1951, *Butcher s.n.*, AMES! Canal Zone, *6 VII 1919, Powell 37, K* Balboa, Canal Zone, *Powell 132*, AMES! K MO! S! Barro Colorado Island, 5 XI 1931, *Shattuck 344*, F! **Comarca de San Blas:** Río Diablo, Tierra firme del pueblo de Narganá, a 7 km de la costa, 40 m, 9 VIII 1994, *Herrera 1702*, AMO! MEXU! MO!

OTHERS RECORDS: Without locality, *Day 59*, slide of illustration AMO! **COSTA RICA: Alajuela:** San Rafael de Ríos Cuarto, 100 m, 8 XI 1964, *Lucas 572*, Illustration, xerox copy AMO!

OTHER SPECIMENS: MÉXICO: Without locality data, *Pavón s.n.*, BM! **Veracruz:** Without locality data, *Fortiño 8423*, F! Ibid. 2000 ft, *Galeotti 5359*, G! P x2! San Andrés Tuxtla, Estación de Biología de los Tuxtlas, 8 IV 1972, *Calzada 733*, AMO! ENCB! XAL! On Mexican National R.R. between Cordoba and Tierra Blanca near El Palmar, rubber experiment station of U.S.D.A. 15 km from Tezonapa, 600 ft, 28 II 1949, *Carlson 1336*, AMES! F! Barranca del monterrey cerca de Cuetzala, 350 m, 5 VI 1985, *Cházaro 3506*, WIS x2! from Playa-Vicente, *Galeotti s.n.*, W 15415! ejido Balzapote, ca. 3 km N of the Biological Station Los Tuxtlas, 100 m, 16 II 1993, *Hietz 871*, XAL x2! Estación de Biológia Tropical Los Tuxtlas, 200 m, 18 III 1983, *Ibarra 488*, ENCB! MO! NY! La Palma, 1000 ft, 29 V 1954, *Johnson 554-1*, SEL! Maltrata, 7 V 1937, *Matuda 1829*, MEXU! West of Rodríguez Clara, ca. 200 m, 4 V 1936, *Nagel 5758*, AMES! AMO! CAS! F! S! SEL! US! a 2 km del Río Tonalá rumbo a Coatzacoalcos, 50 m, 15 VI 1973, *Orozco 155*, F! MEXU! MO! XAL! Coatzacoalcos river, 3 miles from Minatitlán, 50-150 m, 12 V 1934, *Richards 3819*, AMES! Jalcomulco, Barranca de Atipa, Ejido de Santa María Tatetla, 400 m, 28 V 1983, *Robles 192*, AMO! XAL! Laguna Escondida, ca 3.5 km NE de La Estación de Biología Tropical Los Tuxtlas, ca. 230 m, 5 II 1985, *Salazar 449*, AMO x4! ENCB! K! MO! US! Laguna Escondida, 2.5 km NO de La Estacion de Biología Tropical Los Tuxtlas, 200 m, 27 IV 1986, *Sinaca 664*, AMO! Isthmus of Tehuantepec, I 1895, *Smith 1045*, F! MEXU! entrada E de Santiago Tuxtla, 250 m, 11 V 1965, *Sousa 2403*, AMO x2! ENCB! MEXU x2! Río Coscoapan, VI 1969, *Sousa 3775*, AMO! MEXU x2! Ejido El Presidio, 380 m, 21 IV 1976, *Valdivia 2204*, MEXU! Río Soloxuchil, SW del Campamento Hermanos Cedillo, 152 m, 2 IV 1974, *Vásquez 296*, MEXU! MO! XAL! Minatitlán, Rio Uxpanapa, cerca del poblado 14, ca. 12 km por camino al SE de Uxpanapa (Pob. 12), 150 m, 15 V 1983, *Wendt 4075*, CAS x2! MO! **Oaxaca:** from Sotecomapan, 2000 ft, *Galeotti 5359*, W! Loma Bonita, 6 IV 1945, *Hernández 647*, LL x2! Santa María Chimalapa, Río Milagro, ca. 2.5 km al SE de Santa María, 200 m, 23 III 1985, *Hernández 1032*, AMO! CAS! MEXU! MO! ca. 7.5 km al N de Sta. María pr la vereda a la cabecera del Río Verde, en la subida del "Zacatal" al N de Río del Corte, 300 m, 23 IV 1985, *Hernández 1148*, AMO! Sierra San Pedro Nolasco, Talea, *Jurgensen 977*, G x2! Cerro del Naranjal, 15 m, 14 V 1967, *Martínez 1392*, CAS! ENCB! MEXU! XAL! trail Yaveo to San Juanito, 470 m, IV 1938, *Mejía 9245A*, AMES! UC! Mexcala, ca. 200-250 m, 19 II 1991, *Nancy 5042*, AMES! Arroyo Huisisil, 11 km al N de Río Pachiné, distrito de Juchitán, 270 m, 25 III 1988, *Torres 12087*, MEXU! **Chiapas:** Without locality data, *Linden s.n.*, G! Unión Juárez, Talquian, 1 IV 1992, *Aquino 122AA*, MEXU! On north shore of Lago Miramar, near San Quintín on the Río Jatate, 1200 ft, 23 II 1965, *Breedlove 9155*, AMES! CAS! F! On the W side of Laguna Miramar, E of San Quintín, 350 m, *Breedlove 33271*, CAS! Crucero Corozal, a 170 km al sureste de la carretera hacia Boca Lacantun, 180 m, 20 V 1987, *Márquez 123*, ICACH! Ocosingo, a 2 km, de Crucero Corozal camino Palenque-Boca Lacantum, 180 m, 21 IX 1984, *Martínez 7712*, MEXU! a 6 km al S de campamento COFOLASA, el cual esta a 24 km al SE de Crucero Corozal, camino Palenque-Boca Lacantum, 200 m, 17 X 1984, *Martínez 8330*, MEXU! a 8 km al S de Benemérito de Las Américas camino a Flor de Cacao; en zona Marquéz de Comillas, 150 m, 8 IV 1985, *Martínez 11663*, MEXU x5! a 4 km al S de Frontera Corozal, sobre Río Usumacinta, 120 m, 29 V 1985, *Martínez 12285*, MEXU x2! Ibid. *Martínez 12286*, MEXU! Ojo de Agua de San Javier, 123 km al SE de Nvo. camino a Boca Lacantum, 370 m, 29 I 1986, *Martínez 16930*, MEXU! a 170 km al SE de Palenque, camino a Palenque a Boca Lacantum, 170 m, 16 V 1987, *Martínez 20912*, MEXU! En Chajul a la orilla del río, 150 m, 27 X 1992, *Martínez 25466*, AMO! Centro Arqueológico Bonampak, 350 m, 14 V 1982, *Meave B-683*, AMO! Río Leche, 24 V 1933, *Mell 2037*, NY! US! Yajalón, En el Río Pulpitillo, 500 m, 20 X 1982, *Méndez 4870*, MEXU! Río Leche, 24 III 1933, *Miller 2017*, AMES! Zona Arquelógica de Yaxchilán, 130 m, 25 VI 1998, *Rincon 1006*, MEXU! **Tabasco:** 2 km del Ejido Santa Rosa hacia el Ejido Lazaro Cárdenas por el camino a Xicotencatl, 3 V 1986, *Guadarrama 768*, MEXU! Achotal, near Balancán, 29 V 1939, *Matuda 3179*, AMES! CAS! K! LL! MEXU! MICH! US! Teapa, a orilla de un cacaotal a los margenes del Río Puyacatengo, 10 III 1990, *Ramón 225*, AMO! W de Puyacatenango, 100 m, 17 V 1981, *Ramos 731*, MEXU! **Campeche:** Ejido Aguadas camino a San Isidro Aguas Amargas Calakmul, 21 III 1991, *Ucan 1905*, CICY! Ibid. *Ucan 7055*, CICY! **Yucatán:** Near Chitchen Itza, *Ames 106*, AMES! Near Dziton 1 km on way Chitchen Itza, *Ames II106*, AMES! El Cuyo, 17 II 1956, *Enriquez 430*, MEXU! El Paso, 17 IV 1932, *Lundell 1500*, DH! MICH x2! NY! US! **Quintana Roo:** In forest coverin the ruins, *Lundell 7626*, AMES! 3.2-6.4 km N of Tomás Garrido on the road which joins Hwy. 186 west of Nicolas Bravo, 150 m, 14 III 1990, *Sanders 9842*, SEL! a 26 km al N de Coba, 12 III 1980, *Téllez 1840*, MEXU x2! **GUATEMALA:** Without locality data, *Friedrichsthal 1516*, P! Ibid. *Watson 85*, AMES! **Alta Verapaz:** 17 miles N of Salama on road to Cobán, 1946, *Clover 9624*, MICH! Río Sebol, ca. 500 m, 21 IV 1964, *Contreras 4436*, LL! Near Finca Sepacuite, "Chir Chroch", Chrujija Gxec, 22 IV 1902, *CooK 694*, US! Finca Morra, 1200 ft, IV 1899, *Johnson 167*, AMES! US! Vicinity of Río Dolores, near Dolores, 1-2 miles northeast of Cubilguitz, 290-300 m, 3 III 1942, *Steyermark 44851*, AMES! F! G! Cobán, Cubilguitz [Finca Cubilhuitz], 350 m, IV 1913, *Tuerckheim 70*, AMES! G! Cubilguitz, 350 m, IV 1900, *Tuerckheim 7677*, AMES! K! P! US! **Izabal:** South shore of Lake Izabal east of Izabal, ca. 0-600 m, 26 IV 1966, *Jones 3134*, F! U! Los Amates, 90 m, 15 II 1908, *Kellerman 7317*, US! El Estor, Creeke Lagarto, Ensenada de Los Lagartos; 2 m, 16 VI 1988, *Martínez 22773*, MEXU! El Estor, El Boqueron, 12 X 1976, *Pozuelos 5006*, USCG! La Jagua Creek, Murcielago, ca 10 miles E of El Estor on Lake Izabal, 6 VI 1964, *Rowland B-58*, AMES! FLAS! US! Near Puerto Barrios, I 1934, *Schmidt s.n.*, F! Boca de Palmira, 2000 ft, IV 1889, *Smith 1584*, AMES! US x2! Swamps of Salomón Creek 0.5-1 mi south of Bananera, 50 m, 6 IV 1940, *Steyermark 38961*, F! **Petén:** Uaxactum, 26 III 1931, *Bartlett 12322*, AMES x2! MICH! S! Ibid. 26 III 1931, *Bartlett 12669*, AMES x2! LL x2! MICH! Remate, on Fallabon Road, about 9 km east of village, 25 IV 1975, *Contreras 892*, F! LL! S! Lacandon, 5 II 1962, *Contreras 3315*, LL! Lacandon, bordering Sibal, 23 II 1962, *Contreras 3445*, LL! along bank Río Petexbatum, 6 II 1964, *Lundell 177*, LL! Monte Santa Teresa, 12 IV 1933, *Lundell 2670*, AMES! MICH! Tikal National Park, IV 1959, *Lundell 15922*, LL! Ibid. 6 V 1959, *Lundell 15958*, LL! Ibid. 4 III 1961, *Lundell 16880*, LL! Sayaxche, along bank of Río Petexbatum, 6 II 1964, *Lundell 17746*, LL! orillas del camino para Uaxactun, a 2 km, lado noroeste, en Parque Nacional de Tikal, 21 IV 1971, *Ortíz 1701*, NY! MO! US! **BELIZE:** New River, Orange walk, 6 IX 1936, *O'Neill 8343*, AMES! WIS! **Belize:** Spanish Creek, Belize River, 29 IV 1933, *Lundell 3901*, AMES! CAS! MICH! Big Fall, Belize River, 21 III 1933, *Lundell 3903*, AMES! MICH! Big Fall, Belize River, 21 III 1933, *Lundell 3904*, AMES! MICH! S! Big Fall estate, ca. 3 airline km NE Village of Big Fall, just east of Southern Highway, along stream let, 40 m, *Holtz 35607*, MO! **Cayo:** District Belize River, 16 II 1938, *Gentle 2199*, AMES! MICH! NY! Near junction of Barton Creek with the Belize River, ca. 200 ft, 4 V 1969, *Proctor 30275*, LL! **Toledo:** Without locality data, I 1945, *Lamb 59*, F! Temash River from mouth to ca. 12 miles inland, 0-50 ft, 5-6 VIII 1975, *Dwyer 12851*, MO! Río Grande, 21 III 1944, *Gentle 4622*, LL! Temash River, 23 II 1945, *Gentle 5218*, AMES! F! LL! S! US! Jacinto Creek, 4 V 1946, *Gentle 5566*, LL! **Stann Creek:** Without locality data, 8 VI 1939, *Gentle 2853*, AMES! MICH! E of Middlesex, 80 m, 15 II 1990, *Catling B90-12*, SEL! Creek-Mullins River road, IV 1937, *Gentle 1958*, AMES! MICH! NY! In light sidge on lill top. British Honduras: Stam Creele Valley, Big Eddy Ridges, 10 V 1940, *Gentle 3323*, AMES! MICH! NY! Stann Creek Railway 11 miles, 100 ft, 12 VIII 1927, *Schipp 829*, AMES! **HONDURAS:** Without locality data, *Plowden 12*, SEL! **Atlántida:** near Tela, 6 III 1923, *Ames s.n.*, AMES! Laguna Tinta, Ulua River, 23 III 1923, *Ames 258*, AMES! near La Tela, 9 II 1923, *Durin s.n.*, AMES! On the in forest on lower slopes slopes of Mt. Cangrejal, back of Ceiba, 30 VII 1938, *Yuncker 8743*, AMES! MO! NY! US! Tela, Hicague Farm near Tela,

III 1923, *Stewart s.n.*, AMES x3! **Comayagua:** Without locality data, 1800 ft, 22 II 1933, *Edwards 365*, AMES x2! Southern end of Lago Yojoa, 600 m, 10 V 1991, *Davidse 34223*, MO! Ibid. *Davidse 34323*, AMO! Las Limas, 3000 ft, 17 IV 1932, *Edwards 132A*, AMES x2! BM! Near Taulabe, 540-550 m, 8 IV 1947, *Standley 6998*, F! El Banco, 640 m, 1 IV 1945, *Valerio 2365*, AMES x2! F! Near Taulabe, 550 m, 8 IV 1947, *Williams 12337*, F x2! **Colón:** Río Negro Dam, ca. 600 ft, 17 VII 1980, *Saunders 505*, SEL! Road from Chapagua to Hacienda El Tumbador near Chapagua River, 19 km E Trujillo, 18 VIII 1980, *Saunders 577*, SEL! **Copán:** River Valley below Copan Antigua, 8 V 1970, *Barkley 40304*, AMES x2! F! MO x2! **Cortés:** El Jaral, Lake Yojoa, 2000 ft, *Edwards 375*, AMES x2! NY! Río Tepemechin, 300 m, 22 III 1962, *Molina 10604*, AMES! F! NY! US! **Olancho:** Catacamas, Margenes del Río Talgua (Cuevas del Talgua) 8.5 km NE de Catacamas, 1650 m, 10 V 1987, *Ortega 326*, MO! Catacamas, Potreros de Catacamas cerca de la escuela granja demostrativa de Catacamas, 400 m, 26 IV 1957, *Molina 8313*, F! **Santa Barbara:** Aldea de Uncana, 10 km al E de Llama, 400 m, 12 V 1984, *Torres 169*, NY! **Toledo:** Temash River, 23 II 1945, *Gentle 5218*, MEXU! **NICARAGUA:** Without locality data, *Wright s.n.*, US! **Jinotega:** Quebrada La Esperanza, al SE de Wiwilí, 500 m, 14 III 1980, *Araquistain 1977*, CAS! MO! NY! SEL! **Nueva Segovia:** Sangsang, I 1927, *Schramm 45*, US! **Rivas:** Isla Omotepe al NE Volcán Concepción, 140-160 m, 1 III 1983, *Sandino 4257*, MO! **Zelaya:** Río Uli, ca. 100 m, IV 1983, *Ortíz 1149*, SEL x2! Along Río Sucio ca. 0.5 km E of firts suspension bridge E of Bonanza, 140 m, 24 IV 1978, *Stevens 8066*, MO! SEL! Río Kubalí, ca. 7 km W of Río Iyas, 200 m, 4 III 1981, *Stevens 19277*, MO! SEL! **COSTA RICA:** Las colonias-Guapiles, 300 m, 17 IV 1941, *León 655*, F! Tilarán, 750 m, 6 III 1923, *Valerio 32*, US! **Cartago:** Camino a La Suiza, Turrialba, 625 m, I III 1959, *Cordoba 309*, USJ! Pejivalle, 14 V 1924, *Lankester 856*, AMES! between Moravia de Turrialba and the Fila de Chirripó (Chirripo Indian Territory), 900 m, 1 II 1958, *Horich s.n.*, UC! Ibid. 17 IX 1959, *Horich s.n.*, AMES! Ibid. 6 IV 1966, *Horich s.n.*, UC! Turrialba, 650 m, 15 III 1961, *Horich 59-39-28*, MO! Instituto Turrialba, 600 m, 24 III 1950, *León 2386*, USJ! Peralta, 600 m, V 1939, *Valerio 2710*, AMES! Atirro, 600 m, IV 1896, *Smith s.n.*, AMES 3701! Ibid. 400 m, *Smith 6798*, AMES x2! US! Ibid. 600 m, *Smith 6801*, US! Río Las Vueltas, Tucurrique, 635 m, III 1899, *Tonduz 13287*, G! P! US! In mountains near Tuís, along the Río Tuís, 650 m, 3 V 1956, *Williams 19555*, SEL! **Limón:** Without locality data, *Fournier 12226* sub *Rodríguez Caballero 865*, USJ! **Puntarenas:** Playa Blanca (Golfo Dulce), 0 m, 25 II 1933, *Valerio 550*, F! **San José:** Vicinity of El General, 670 m, II 1939, *Skutch 4170*, AMES! S! UC! US! **PANAMA:** Without locality data, *Hayes 503*, NY! **Bocas del Toro:** Changuinola Valley, I 1924, *Dunlap 366*, US x2! **Colón:** Mojinga Swamp near mouth of R. Chagres, below 1 m, 11 III 1935, *Allen 867*, AMES! BM! Portobelo, Trail along first river west of Portobelo, 24 IV 1972, *Gentry 5146*, MO! NY! Forest along R. Boqueron above Peluca Hydrographic Station, ca. 90 m, 22 II 1935, *Hunter 652*, AMES! MO! **Darién:** Río Pirre, IV 1966, *Duke 8241*, MO! Near Refugio, 15-21 miles N of Santa Fé, ca. 30 m, 16 II 1967, *Duke 10260*, MO! **Los Santos:** Guayabo, a place several miles west of Tonosí, III 1966, *Stern 1902*, ILL! MICH! MO! US! **Panamá:** Balboa, Canal Zone, II 1923, *Ames s.n.*, AMES! Barro Colorado, Canal Zone, 7 II 1969, *Croat 7775*, F! MO! NY! Barro Colorado Island: Drayton House Cove, 28 II 1969, *Croat 8257*, F! MO! Ibid. 10 IV 1970, *Croat 9509*, MO! Ibid. 16 VII 1970, *Croat 11316*, MO! San José Island, Perlas Archipelago, Gulf of Panama (about 55 miles SSE of Balboa), 30 III 1945, *Johnston 595*, AMES! Ibid. 3 IV 1945, *Johnston 614*, AMES! BM! P! U! Perlas Archipielago, San Jose Island, Gulf of Panama (about 55 miles SSE of Balboa). Naval Station road, 2 IV 1945, *Johnston 609*, AMES! FI! US! Near Tapia river, 3 VI 1923, *Maxon 6655*, AMES! US! Ibid. VI 1923, *Maxon 6698*, AMES! F! US! Panama City, I 1934, *Paul 490*, US! Sabana de Panama, 8 IV 1911, *Pittier 3403*, AMES! US! Barro Colorado, Canal Zone, 17 III 1932, *Shattuck 829*, F! Ibid. I 1932, *Shattuck 835*, MO! Ibid. 28 VII 1929, *Woodworth s.n.*, AMES! Ibid. 24 III 1944, *Zetek 5135*, F! **Veraguas:** vicinity Santa Fé, 1000 ft, 26 III 1947, *Allen 4440*, P! US! San Francisco, 1000 ft, *Powell 136*, AMES! **COLOMBIA:** Cultivado por Edwin Granada cerca de Guarne, 1000 m, *Escobar 5331*, AMO! Nueva Granada, 1851, *Triana s.n.* P! **Amazonas**: Trapecio Amazonico, Loreto yacu river, ca. 100 m, 1 X 1945, *Schultes 6729*, AMES! **Antioquia:** Anori, Providencia area, 400-800 m, 20 II 1976, *Soejarto 4473*, HUA! **Boyacá:** NW of Bogotá, 3000-4000 ft, 4 VIII 1932, *Lawrance 384*, MO! NY! **Cauca:** Forests of Cauca, 800-1200 m, *Lehmann 8959*, AMES! LL! NY! **Córdoba:** Quimarí, Cordillera Occidental, Vertiente Oriente, 500 m, 20 IV 1949, *Sneidern 5761*, S! **La Guajira:** Near Conejo, 14 km south of Fonseca, ca. 250 m, 7 III 1944, *Haught 4027*, AMES! COL! US! **Magdalena:** Santa Marta 1898, *Smith 2356*, AMES! CM! **Meta:** Sierra de la Macarena, margen izquierda del Río Sansa cerca a su desembocadura en el Guejar, 5 III 1956, *Idrobo 2145*, COL x2! F! S.Martín-Hauser Quebrada Honda, 350 m, 2 II 1937, *Renz 3110*, RENZ x3! Umgebung von Camp Plaza Bonita, ca. 2 km unterhalb des Durch Bruches des Río Guejar durch die Cuchilla de Nema, 350 m, 17 II 1937, *Renz 3111*, RENZ! Zwrichen Uribe, und Río Guayabero, Quebrada Platanos, 500 m, 15 IV 1939, *Renz 3180*, RENZ! **Santander:** Vicinity of Barrancabermeja, between Sogamoso and Colorado Rivers, 100-500 m, 17 XI 1934, *Haught 1419*, US! Vicinity of Puerto Berrio, between Carare and Magdalena Rivers, San Juan Valley (Camp VI), 100-700 m, 15 VI 1935, *Haught 1785*, US! Umgebung von Camp Guacamayas am S. Juan-Fluss, ca. 130 m, 9 XI 1936, *Renz 3056*, RENZ! 15 leguas al SE de Barrancabermeja, a 3 km, de la margen izquierda del Río Opón, ca. 200 m, 10 X 1954, *Romero 5027*, COL! **Valle del Cauca:** Río Agua Bonita to Río Vieja, east Zarzal, 1100-1300 m, 23 VII 1922, *Pennell 8588*, AMES! US! **ECUADOR:** Hda. Montecarlos, 11 V 1967, 10 m, *Pineda 16*, S! **Napo:** Cuyabeno Nature Reserve, Río Cuyabeno and Laguna Canangueno, 240 m, 12 XI 1982, *Asanza 21204*, QCNE! Cuyabeno Nature Reserve, Laguna Grande, 240 m, 8 XI 1982, *Asanza 41103*, AAU! QCA! QCNE! Cuyabeno Nature Reserve, Río Cuyabeno and Laguna Coñangueno, 240 m, 12 XI 1982, *Asanza 41204*, AAU! QCA! Río Cuyabeno to about 6 km upstream from Puerto Bolivar, 300 m, 26 VIII 1981, *Brandbyje 36160*, AAU! Río Cuyabeno, 10 km upstream from Río Aguarico, 220 m, 19 II 1980, *Holm-Nielsen 21436*, AAU! Laguna Canageno, 31 VII 1984, *Jaramillo 6902*, AAU! QCA! Río Largato Cocha, 2 hours upstream from Río Aguarico from Redondo Cocha to Gamitana Cocha, 190 m, 12 VI 1983, *Lawesson 44322*, AAU! Río Lagarto Cocha, Near Redondo Cocha, 190 m, 15 VI 1983, *Lawesson 44423*, AAU! QCA! **[Sucumbios:]** Reserva Cuyabeno, Río Cuyabeno, 2-3 km arriba de Laguna Grande, 230 m, 16 XI 1991, *Palacios 9013*, QCNE! **Tungurahua:** Vicinity of Ambato, Tilulún, II 1919, *Pachano 103*, US! **PERU:** Without data, W 47297! Without locality data, *Wullschalegel 1119*, W x2! Stromgebiet des Ucayali von bis zur Mundung, I 1923, *Tessmann 3295*, S! **Huánuco:** Tingo María, Río Huallaga, 19 VII 1940, *Asplund 12368*, S! Tingo María, 24 VII 1940, *Asplund 12477*, AMES! S! Leoncio Prado, 6 km S of Tingo María, near Highway, 2400 ft, 2 XII 1945, *Seibert 2256*, AMES! Leoncio Prado, Tingo María, Río Huallaga, 650 m, 5 VI 1958, *Woytkowski 5021*, AMES! **Loreto:** Without locality data, *Moore A 90*, AMES! Distrito de Caballo Cocha, Bordes de Caballo Cocha (laguna), 16 VI 1987, *Pinto 6266*, COL! Margenes del Río Apayacu 15 km, aguas arriba de la desembocadura, 10 VI 1987, *Pinto 6297*, COL! Maynas, Ditr. Islandia, Rio Yavari; trocha posterior al caserio (Islandia esta cerca al río Amazonas y frente a Benjamin Constant, Brazil), 8 VIII 1976, *Revilla 1001*, SEL! Río Mazán, river bank, 108 m, 16 I 1935, *Schunke 44*, AMES! SEL! UC! US! USM! Cocha Shinguulto, 130 m, 4 V 1985, *Vásquez 6436*, USM! Maquisapa on the upper Río Nanay, VII 1929, *Williams 1213*, AMES! **San Martín:** Zepelacio, near Moyobamba, ca. 1100 m, VI 1934, *Klug 3669*, NY! US! Zepelacio, Near Moyobamba, ca. 1100 m, VI 1934, *Klug 3869*, AMES! Juan Jui, Alto Río Huallaga, 400-800 m, IV 1936, *Klug 4301*, AMES! S! U! UC! US! USM! **BOLIVIA: Santa Cruz:** Guarayos. Reserva de vida silvestre Ríos Blanco y Negro, a 3 km al E de las riberas del Río Negro y 5 km al S de las instalaciones de Preservancia,

270 m, 19 VII 1993, *Vargas 2706*, F! **VENEZUELA:** Without locality data, 7 IX 1978, *Bergold 7*, AMO! Río Amacuro, Venezuela-British Guiana frontier, Sierra Imataca, Donstream from mouth of Yarakita River, 65-800 m, 9 IX 1960, *Steyermark 87459*, NY! RB! SP! **Amazonas:** 0.5-3 km NE and E of San Carlos de Río Negro of airstrip, 120 m, 22 I 1980, *Liesner 8574*, SEL! at mounth of Río Cuao, 13 II 1949, *Maguire 29028*, NY! **Anzoátegui:** Along Río Leon by Quebrada Danta, tributary to Río Neveri northeast of Bergantin, 500 m, 20 II 1945, *Steyermark 60996*, AMES! **Bolivar:** NE of Upata, near El Paraíso camp, 500 m, 17 IV 1967, *Bruijn 1746*, NY! S! U! Alto Río Paragua (Guayana), Near mouth of Río Carapo, 5 IX 1943, *Cardona 877*, US! **Zulia:** Orinoco Delta, Cano del Guinipa, 3 II 1911, *Bond 86*, AMES! Río Maraca, Fuss der Perijá-Kette, nordlich Machiques, 200 m, 16 XII 1950, *Renz 6577*, RENZ! Río Negro-Tal, Fuos der Perijá-kelle, un Machiques, 200 m, 23 I 1951, *Renz 6605*, RENZ! Quebrada La Gé, Perijá-Vorbenge, 150 m, 20 III 1955, *Renz 8383*, RENZ! Sierra de Perijá, Faldas interiores a lo largo del Río Yasa, arriba de "Kasmera" (Estacion Biologica de la Universidad del Zulia), al Suroeste de Machiques, 500-600 m, 26 VIII 1967, *Steyermark 99805*, AMES! **GUYANA:** Without locality data, *Snlittgerber 353*, W 47297! Without locality data, I 1898, *Thurn 94*, K x2! Bords de la Acarouany, IX 1856, *Lag 764*, G! Upper Rupununi river, near Dadanawa, 28 V 1922, *De la Cruz 1383*, AMES! Vicinity of Bartica, on the Essequibo river, 3 IX 1922, *De la Cruz 2021*, AMES! Tapakuma River Esse, 29 IV 1976, *Grewal 161*, U! Gunn's, Essequibo River, 240-260 m, 3 X 1989, *Jansen-Jacobs 1949*, CAY! Anglaise, I 1868, *Schomburgk 426*, P! Between Mokay R and Suru-a-gu-puh R, Kukui river, 470 m, 11 IX 1970, *Tillett 45376*, NY! **Cayenne:** British; Ikuribisi, *Atkinson 62*, AMES! Mouth of Kamarang River, upper Mazaruni region, 12 II 1939, *Pinkus 200*, AMES! S! SEL! US! Crique Gabaret, 12 XI 1976, *Veyret 1427*, CAY x2! Crique Elionore, 17 XI 1976, *Veyret 1436*, CAY! HB! P! **Northwest:** British; Northwest District, Waini river, 2 II 1922, *De la Cruz 1255*, AMES x2! Northwest District, Waini river, Marabo Creek, 4 II 1922, *De la Cruz 1268*, AMES! US! Assakatta, Northwest District, 18 IV 1923, *De la Cruz 4260*, AMES! **Pomeroon:** Acqueero Landing, 12 IX 1921, *De la Cruz 1110*, AMES! Waramuri Mission, Moruka River, 23 X 1922, *De la Cruz 2535*, AMES! CM! UC! US! Pomeroon river, 14 I 1923, *De la Cruz 2964*, AMES! Yarikita Police Station, junction of Yarikita and Amakura rivers, 17 I 1920, *Hitchcock 17644*, AMES! Corestene River, 800 m, I 1879, *Jenman 448*, P! **GUAYANA FRANCESA:** Without locality data, *Richard s.n.*, P! Ibid. VI 1855, *Sagazy 764*, W!Arrondissement: Fleuve Oyapock crique Gabaret, 20 VII 1976, *Fily 39*, P! Riviere Grand Isiasi en amout de Sant Bedjere, *Granville 3126*, P! Riviere Grand Inini, en amont de Saut Badjére, 8 IX 1970, *Granville B-3726*, CAY x2! U! Riviere, Grand Inini en aval et en amont de Degrad Fourmi, 13 IX 1985, *Granville 8192*, SEL! Fleuve Approuague, entre le saut Petit Japigny et la crique Couata, 17 X 1968, *Oldeman T-224*, CAY! U! Fleuve Kourou, á environ 2,600 km en amont du dégrad Saramacca, 16 IX 1967, *Oldeman B-1304*, CAY! Reviere des Cascades, 13 XI 1965, *Oldeman 1684*, CAY! U! Karouang, I 1856, *Sagot 764*, S! entre Saint Macaque et Carbet, Statio Rivers du petit Guaqui, 1 IX 1961, *Schnell 11976*, P! Pres de Saint Macaque et Carbet , Statio Rivers du grand Guaqui, 12 IX 1961, *Schnell 12152*, P x2! U! **SURINAM:** Without locality data, *Focke 122/353*, L! Ibid. III 1842, *Hostman 405*, G! W! Ibid. I 1846, *Hostmann 605*, S! Ibid. *Kappler 56*, S! Ibid. X 1844, *Kappler 1656*, G! P! S! W! Mostina, Without collector data, L 903322-313! Bank of Coppename River, 5 X 1943, *Geijskes 975*, U! Vía secta ab Moengo tapoe ad Grote Zwiebelzwamp, Along Wana-creek, X 1948, *Lanjouw 614*, AMES! U! Vía secta ab Moengo tapoe ad Grote Zwiebelzwamp, along Wana-creek, 5 X 1948, *Lanjouw 664*, U! Saramacca River, along Toekoemoetoe Creek, 8 IX 1944, *Maguire 24916*, AMES! U! US! In zwampbos bij Doksie-kreek, Coppename bij de mond van de Tibiti, 9 X 1954, *Mennega 264*, U! Along Tangimamma creek, Upper Coppename trib, 18 XI 1954, *Mennega 462*, U! Waroemapan, tributary of Litanie River, 30 IX 1937, *Rombouts 845*, AMES x2! HB! U! **BRASIL:** Without data, *320*, P! Without locality data, 3 VI 1977, *Scully/OIC 1584*, SEL! Purús, Bom dugar, V 1904, *Hukey 4715*, MG! Vista Alegre, Río Brasil, *Kuhlmann 264*, RB! **Amapá:** Boa Esperanca, opposite mouth of Riviere Camopi, 18 VIII 1960, *Egler 47657*, HB! about 3 km northeast of Cachoeira Manaua, 14 IX 1960, *Irwin 48252*, HB! MG! U! Río Oiapoque, about 1 km north of mouth of Río Mutura, *Irwin 48418*, AMES, HB! U! Fleuve Approuague entre le saut Petit Japiguy et la crique Cousta, 17 X 1968, *Oldeman T-224*, P! along the river, Río Aracuari, 135 m, 30 VIII 1961, *Pires 50594*, AMES! HB! MG! UC! **Amazonas:** Tabatinga, Río Solimóes, *Prance 16755*, HB! Near Livramento on Río Livramento, on inmediate shore of river, 12 XI 1934, *Stevens 7308*, AMES! NY! U! Near Palmares, Basin of Río Solimoes, 11 IX 1936, *Stevens 8146*, AMES! NY! S! Mouth of the Río Negro, *Schomburgk 1660*, AMES! **Bahía:** Without locality data, 1857, *Blanchet s.n*, G x2! Ibid. *Blanchet 1531*, G! Without colector data, Bahía River, W 33640! Itabuna on CEPLAC, *Read 3453*, US! Itabuna-Bahia, Río do Meio estrada a Aurelino Leal, 14 I 1971, *Dos Santos 1317*, HB x2! Bahía Brasilia, *Sholzhy s.n.*, AMES! Parque Nacional de Monte Pascal, 21 III 1968, *da Vinha 99*, HB! **Espírito Santo:** pr. Ecoporanga, 28 IX 1977, *Colnago 2*, HB! Reserva Florestal Linhares VRD, próximo a Estrada 134, Talhao 301, 27 III 1973, *Spada 230*, HB! RB! **Mato Grosso:** Without locality data, 8 V 1934, *Occhioni s.n.*, RB! by Brejo block 2, near Base Camp, 10 VIII 1968, *Argent 6641*, AMES! Chapada dos Guimaraes, 10 X 1978, *Guilharme 680*, HB! Río Paraguay below Diamantino, X 1891, *Moore 657*, BM! Alto Xingu, VIII 1949, *Sick B 490*, RB! 7 km E of BR163, N of Río Celeste, 51 km S of Sinop, riverine forest and along Corrigo Nandico, 18 IX 1985, *Thomas 3861*, SEL! **Pará:** Igarapé Acarahy, afluente do Baixo Xingais, regiao onde fol feitoûm levantamento estatistico florestal pela FAO, XI 1955, *Fróes 32539*, HB! Marabá, Serra dos Carajás, margem direita do Rio Itacaiunas,ûpróximo ao Caldeirao, 10 VIII 1985, *Rosa 4885*, MG! Belém, *Pontes 61*, HB! Carajás, Río Gelado, desmatamento, 18 IX 1984, *da Silva 81*, MG! Tomé-Acú, margem do Río Acará, Ramal para a fazenda Borba Gato, 27 X 1979, *Silva 5110*, MG! Upper Cupary River, plateau between the Xingu and Tapajos Rivers, IX 1931, *Stevens 1181*, AMES! Altamira (PA), Río Iriri, próximo a margem da estrada AltamiraûItaituba km 180 (serraria BANACH), 28 VIII 1986, *Vasconcelos 123*, MG! Altamira (PA), Río Xingu, A direita do Río Xingu, no largo doûmurici Várzea, 20 X 1986, *Vasconcelos 386*, MG! **Paraíba:** Río Tinto, 9 XI 1968, *Parasita 6*, HB! **Rondonia:** Río Mutumparaná 4-15 km. above Mutumparaná T.F. de Rondonía, Río Madeira, Mutum-Parana, 4 VII 1968, *Prance 5549*, AMES! COL! HB! MG! S! **TRINIDAD & TOBAGO:** Without locality data, 01 IX 1956, *Downs 107*, AMES! West of Milepost 22.3/4 Long Strech road, 31 III 1979, *Philcox 8306*, K! **Tobago:** Trafalgar, West Indies, 20 III 1913, *Broadway s.n.*, AMES! P! S! West Indies, Sant D'ean vía Morosal, 18 X 1927, *Broadway 6706*, P! **Trinidad:** Woods of Conupia, 23 III 1892, *Alexander s.n.*, AMES! St. Clair Experimental Station, 16 IV 1907, *Broadway s.n.*, AMES x3! Northern district, 01 X 1927, *Broadway s.n.*, MO! Tacarigua, 31 III 1890, *Mitchell s.n.*, AMES!

OTHER RECORDS: MEXICO: Veracruz: Laguna Escondida, ca 3.5 km NE de La Estacion de Biología Tropical Los Tuxtlas, ca. 230 m, 5 II 1985, *Salazar 449*, spirit and illustration, AMO! **Chiapas:** Río Lacanjá, ca. Bonampak, 300 m, IV 1982, *Soto s.n.*, spirit, AMO! Selva Lacandona, rumbo a Laguna Ocotalito, *Soto 10799*, digital photo, AMO! (Illustration voucher) **Quintana Roo:** Unidad Agricola Lazaro Cárdenas, 28 VII 2004, *Ibarra 252*, spirit, AMO! **GUATEMALA:** Without locality, only indicated as Region 7 (Atlantic Ocean Lowlands), *Behar s.n.*, color photo published in Guatemala y sus Orquídeas, p. 191; **COSTA RICA:** Without locality data, flowered in the collection of *Emma de Soto s.n.*, photographed 19 V 2000, color photo, in F. Pupulin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1: 293, San José, C.R.; **COLOMBIA:** Without locality data, cult. by Edwin Granada, color photo published at Orquídeas Nativas de Colombia

vol. 5, suplemento, photo 867; **Antioquia:** E de Antioquia, 2000 m, *Duque 1350*, photo, AMO! cult. Medellin by Guillermo Misas, illustration by *Ortíz Valdivieso 742*, xerox copy, AMO! **Chocó:** Bahía Solano, *Misas 39*, xerox of illustration, AMO! **PERU: Amazonas:** Iquitos, ca. 100 m, *Bennet 3610*, illustration made by *Pastorelli 496*, xerox copy, AMO! **BRASIL:** illustration published in Ic. Orch. du Brasil, xerox copy, AMO! **Amazonas:** Manaus, 22 II 1873, *Barbosa Rodríguez 4: t. 28*, xerox of illustration, AMO!

EPIDENDRUM LACUSTRE Lindl. Plate 1135

OTHER SPECIMENS: HONDURAS: Olancho: Sierra de Agalta (La Picucha), La Picucha Peak in the Agalta National Park, 2200 m, 14 VIII 1991, *Thomas 4*, MO! Sierra de Agalta (La Picucha) la Picucha peak, highest point in Agalta National Park, 13 km NNW of Catacamas, 2250 m, 2 VI 1992, *Thomas 463*, MO! **NICARAGUA: Jinotega:** Along Hwy. 3 between Matagalpa and Jinotega, ca. 6.8 km SE of Jinotega (at intersection of bypass), ca. 1520 m, 25 VIII 1979, *Stevens 10058*, F! MO! Along Hwy 3 between Matagalpa and Jinotega, ca. 6.8 Km SE of Jinotega (at intersection of bypass), 1520 m, 14 IX 1980, *Stevens 17840*, SEL! **Matagalpa:** Zopelota Peak [Cerro La Zopilota], 4800 ft, *Heller 8638*, SEL! Fuente Pura, Km 142, carretera Matagalpa-Jinotega, 1400-1450 m, 26 VIII 1982, *Moreno 16985*, SEL! Cerro El Picacho above Hotel Santa María de Ostuma, 1350-1585 m, 30 VIII 1985, *Nee 27640*, AMO! SEL! Santa Maria de Ostuma, 1500 m, *Neill 859*, MO! Santa Maria de Ostuma, Disparate de Potter, Cordillera Central de Nicaragua, 1600 m, 15 I 1965, *Williams 27656*, F! **Granada:** Volcan Mombacho, 10 II 1977, *Atwood, Jr. 77136*, SEL! Volcán Mombacho, 1 XII 1940, *Kovar 1815*, SEL! Volcán Mombacho, 750-950 m, 5 VII 1923, *Maxon 7807*, AMES! US! En las ultimas antenas del Volcán Mombacho, 1200-1220 m, 23 II 1981, *Moreno 7129*, MO! W Volcán de Mombacho, al tope del camino de Finca El Progreso, 1250 m, 22 XI 1981, *Sandino 1559*, MO! Volcán Mombacho, 950-1150 m, *Stevens 4330*, MO! Volcán Mombacho, Plan del Flores to W rim, 14 XI 1978, *Stevens 10828*, LE! MO x2! SEL! **Rivas:** Isla Ometepe, faldas del Volcán Maderas al S de la Hacienda Magdalena, 300-900 m, 28 XI 1982, *Moreno 18866*, MO! Isla Ometepe, Volcán "Maderas" – Bagüe, 1200-1260 m, 1 V 1984, *Robleto 489*, MO! Isla de Ometepe, NW slope of Volcán Maderas, to rim somewhat E of the highest point, 1000-1350 m, 24 II 1978, *Stevens 6504*, MO! **COSTA RICA:** Without locality, *Endres 103*, W! Sitio de Eusebio Ortiz, *Endres 581*, W! **Alajuela:** San Pedro de San Ramon, 1075 m, 1 IX 1921, *Brenes 124*, AMES! Parque Avila, La Palma, 1150 m, 18 IX 1922, *Brenes 475(145)*, AMES! Bois La Palma a San Ramon, 1275 m, 27 VIII 1925, *Brenes (229)1417*, F x2! La Palma de San Ramon, 5 III 1927, *Brenes 1634(52)*, AMES! Ibid. *Brenes 1634A(52)*, CR!Rio Peñas Blancas, R. B. Monteverde. Cordillera de Tilarán, Valle del Río Peñas Blancas, Quebrada El Valle, 1600 m, 17 VIII 1993, *Bello 5217*, AMO! Alfaro Ruiz Palmira, 2200 m, 4 VIII 1938, *Smith 1026*, AMES! SEL! Alfaro Ruiz, Palmira, 6000 ft, 30 VIII 1937, *Smith 254*, F! Alfaro Ruiz Zapote, caribb watershed, 1400 m, 17 VIII 1938, *Smith 1100*, AMES! SEL! San Ramón, Los Ángeles de San Ramón, 21 XII 1924, *Brenes 3239*, NY x2! Reserva, vertiente Pacifico, 1520-1580 m, 15 VIII 1976, *Dryer 557*, CR! Reserva Biológica Monteverde, Reserva Vert. Pacifico, cerca de la División Continental (Ventana), 1560-1600 m, 25 VIII 1976, *Dryer 673*, F! San Isidro Cerro de Las Lajas, north of San Isidro, 2000-2400 m, 7 III 1926, *Standley 51497*, AMES! San Isidro Cerro de Las Caricias, north of San Isidro, 2000-2400 m, 11 III 1926, *Standley 52328*, AMES! Alfaro Ruiz Palmira, 2200 m, 2 IX 1938, *Smith 1162*, AMES! San Ramón, La Palma, 1 VIII 1921, *Wercklé 64*, AMES! **Heredia:** Vara Blanca, Pasture near Rio San Rafael, NW slopes of Barba Volcano, 1800 m, 17 IX 1967, *Lent 1286*, F! Along the cart-road from Vara Blanca (between Poas and Barba volcanoes) to La Concordia, 1600-1950 m, 23 VII 1923, *Maxon 8452*, AMES! US! Cañón del Río Sarapiqui, Vara Blanca, 1400 m, 12 VIII 1978, *Todzia 397*, CR! Parque Nacional Braulio Carrillo, Vásquez de Coronado, Cerro Zurquí, 1600 m 13 IX 1978, *Todzia 439*, CR! Poasito, 2000 m, 12 IX 1979, *Todzia 696*, CR! Las Vueltas region N of Cerro Chompipe, ca 15 km NE of Heredia and 3 km N of Cerro Redonde de La Cruz, 1900-2000 m, 15 X 1974, *Utley 1300*, F! On a trail directly N of Cerro Chompipe, ca. 2 1/2 km N of cerro Redondo de La Cruz, 2000 m, 25 XI 1975, *Utley 3196*, F! Vara Blanca, 2 VII 1936, *Valerio 360*, CR! **Puntarenas:** Reserva Biológica Monteverde, Central Monteverde, upper San Luis Valley on pacific slope, 1200 m, 20 X 1985, *Bello 3085*, MO! Monte Verde; Veracruz River Valley south of reserve, 1300-1500 m, 22 VIII 1986, *Bello 5342*, MO! Ibid. *Bello 5370*, MO! Reserva, Vert. Pacifico, 1300-1400 m, entre Reserva y San Luis, 1 VIII 1977, *Dryer 1615*, CR x2! Reserva Biológica Monteverde, 1550 m, 1550 m, 11 VII 1981, *Haber 569*, MO! **San José:** Parque Nacional Braulio Carrillo, Vásquez de Coronado, La Palma area, northeast San Jerónimo, above the La Hondura Valley, 1500 m, 27 V 1968, *Burger s.n.*, CR! F! Along CA-2 on western ascent of Cerro de La Muerte; mile of turnoff for road 222, ca. 2000 m, 27 II 1976, *Croat 32839*, MO! Sarapiqui Above Cariblanco, 20 VIII 1963, *Dodson 2455*, SEL! Desamparados San Cristobal Sur, ca. de 4 km al O, 1850 m, 26 IX 1996, *García-Cruz 929*, AMO! Zona Protegida Caraigres Cordillera de Talamanca, 1 km al sur de Casa Mata, 1950 m, 13 VIII 1983, *Hágsater 5309*, AMO x2! Fila de la Cordillera de Talamanca, 1 km al sur de Casa Mata, 1950 m, 26 IV 1981, *Hágsater 6330*, AMO! Casa La Guaria, Moravia, 1 VII 1970, *Lankester C6471*, E! Tarrazu, Cuenca del Naranjo y Paquita, La Virgen, cabecera, Río Palo Seco, 1100 m, 12 XI 2000, *Morales 7399*, INB! Parque Nacional Braulio Carrillo, Vásquez de Coronado, La Palma, ca. 1600 m, 17 III 1924, *Standley 38321*, AMES! Vásquez de Coronado, Las Nubes, 1500-1900 m, 20 III 1924, *Standley 38892*, AMES! Ibid. *Standley 38907*, AMES! Vásquez de Coronado, La Hondura, 1200-1500 m, 9 III 1926, *Standley 51838*, AMES! Zona Protegida Caraigres, San Cristobal Road, 5000 ft, 27 V 1928, *Stork 2186*, AMES x2! Parque Nacional Braulio Carrillo, Vásquez de Coronado La Palma de San Jose, 1400-1500 m, 12 VIII 1979, *Todzia 673*, CR x2! Parque Nacional Braulio Carrillo, Vásquez de Coronado, Region between Cascajal and ca 8 km northeast on highway No. 216 and ca 6 km slightly south of due east from Alto de La Palma, 1600-1800 m, 23 VIII 1975, *Utley 2927*, F! Zona Protegida Caraigres, El Emplame, carretera Interamericana, 30 V 1987, Vargas *GV-282*, USJ! Near El Empalme, Cordillera de Talamanca, 1600 m, 6 V 1956, *Williams 19679*, SEL! **Cartago:** Without locality, 1850 m, 28 VIII 1982, *Iizuka 55*, MEXU! Ibid. *Lankester 445*, AMES! Tapantí Watershed Preserve, ca. 20 miles SW of Paraíso; 5 II 1979, *Croat 47020*, MO! Cerro de la Muerte, Ruta 2 km. 36, 1850 m, 18 V 1993, *Dombeck s.n.*, USJ! Palo blanco, Volcano Barba, south Cartago, *Endres s.n.*, W! Cordillera de Talamanca, km 32.5 al sur de Cartago, 13 VIII 1983, *Hágsater 6680*, AMO x3! CR! La Georgina, Villa Mills Zona de La Georgina, 30 V 1987, *Hurtado 9*, USJ! Santa Clara de Cartago, 1 VIII 1928, *Lankester s.n.*, AMES! Parque Nacional Tapantí, Tapantí hort. slopes of Alto Palillos, 10 km S of Tapantí, 1650 m, 20 VIII 1967, *Lent 1203*, F! Parque Nacional Tapantí Riverside woods just above dam under construction by I.C.E. in Project Tapantí, 1635 m, 17 X 1971, *Lent 2198*, CR! F! Paraiso P. N. Tapantí, Valle del Reventazón, Río Grande de Orosi, Riveras del Río. Sector Dos Amigos, 1500 m, 1 IX 1994, *Mora 363*, INB! MO! Paraíso Reserva Natural de Tapantí, 1300-1500 m, 25 IX 1996, *Sánchez 425*, AMO! Ibid. *Sánchez 426*, AMO! Ibid. *Sánchez 430*, AMO! Ibid. *Sánchez 431*, AMO! Ibid. *Sánchez 432*, AMO x4! (Illustration voucher) Cerro de La Carpintera, 1500-1850 m, 1 II 1924, *Standley 34462*, AMES! La Carpintera, 1500-1830 m, 1 II 1924, *Standley 35637*, AMES! Ibid. 1700 m, 1 IX 1937, *Valerio 2550*, AMES! Vásquez de Coronado, Las Nubes, above San Isidro, ca. 1600 m, 21 VIII 1961, *Weber 6001*, AMES! Panamerican Highway, Cordillera de Talamanca, 2650 m, 26 VIII 1961, *Weber*

6090, AMES x2! Ibid. *Weber 6091*, AMES! **PANAMA: Bocas del Toro:** Cerro Hornito, S facing slope approached from Los Planes de Hornito, 1750-1900 m, 22 IX 1987, *Croat 67944*, MO! Cerro Colorado 6.5 mi W of Chamé, 1630 m, 7 VII 1988, *Croat 69152*, AMO! MEXU! MO x2! Region of Cerro Colorado, on trails from continental divide, 7mi from Chami camp, ca. 1500 m, 12 IV 1986, *McPherson 8828*, MO! Vicinity of Cerro Colorado mine about San Felix. Along trails of north of road along continetal divide, 1500 m, 26 I 1988, *MacPherson 12021*, MO! **Chiriquí:** Cerro Colorado, along mining road 31.6 Km beyond bridge over Rio San Felix (10.6 Km beyond turnoff to Escopeta), 1690 m, 15 VII 1976, *Croat 37141*, MEXU! SEL! Gualaca-Chiriquí Grande, Road over Fortuna Lake, along gravel road with departs main higwy near continental divide (4.5 mi N of Middle of bridge over Fortune Lake) Just south of Border with Bocas del Toro Province, 1170 m, 23 VI 1987, *Croat 66677*, MO! Gualaca Cerro Hornito, S facing slope approached from Los Planes de Hornito, 1750-1900 m, 22 IX 1987, *Croat 67944*, MEXU! MO! SEL! Cerro Colorado, along road to copper mine development N of San Felix, 20.5 mi N of the bridge near San Felix, 8.3 mi beyond Chame and turnoff to Escopeta, 1630 m, 30 III 1993, *Croat 75025*, MO! Fortuna Dam area, North fork of Quebrada de Arena, near continental divide, 1100 m, 8 II 1986, *Churchill 4851*, MO! Boquete, Bajo Chorro, 6000 ft, 1 V 1939, *Davidson 1288*, F! Gualaca Path from Linares farm circa 1400 m to top of Cerro Hornito, 1750 m, 27 XII 1977, *Folsom 7249*, MO! SEL! 15 km N of Hornito on road to La Fortuna, along small stream, 17 II 1979, *Hammel 6238*, MO! Cerro Colorado, 1750 m, 15 II 1985, *Luer 10557*, MO! Cerro Colorado, above the Copper Mine, ca. 1600 m, 1 VI 1986, *Luther 1067*, AMO! SEL x2! Vicinity of Fortuna Dam. Along road north of Lake, ca. 1100 m, 8 II 1987, *McPherson 10417*, MO! San Félix N of San Felix at Chiriqui-Bocas del Toro border, on Cerro Colorado copper mine road along continental divide, 5000-5500 ft, 4 V 1975, *Mori 5872A*, MO!Boquete Fortuna dam site; mostly collected along stream, 1200 m, 7 II 1985, *Werff 6670*, MO! **COLOMBIA: Santander:** Charalá, límites entre los departamentos Santander y Boyacá; Corregimiento de Virolín, Finca "La Sierra", 2500-2600 m, 1 V 1976, *Lozano 2530*, COL! **Cundinamarca:** Soacha, Laguna de Catarnica, Santandercito, 2100 m, 20 VII 1961, *Carvajalino s.n.*, HPUJ! Soacha, Santandercito, Laguna de Catarnica, ca. 2000 m, 16 II 1959, *Fernández 5604*, COL! Soacha, Laguna de Catarnica, Santandercito, ca. 2050 m, 16 III 1968, Ortíz 58, HPUJ! (Illustration) Soacha, Macizo Montañoso al sur de Santandercito, Laguna de Catarnica, 2000 m, 16 II 1959, *Uribe 3238*, COL! **Valle del Cauca:** [Dagua], Km 18 Cali-Buenaventura ["Kilometro Diez y Ocho"], 2000 m, 20 VI 1965, *Dodson 3132*, SEL! **Putumayo:** Carretera de "El Pepino" hacia Sibundoy, 1500 m, 8 I 1957, *Ospina-Hernández 122*, COL! **VENEZUELA: Trujillo:** Alrededores de un pantano grande entre Boconó y El Batatal, 1300 m, 5 IX 1966, *Steyermark 97407*, AMES! **Táchira [Junín]:** Zwischen Rubio und Las Delicias, gebiet der Passhöhe, 1800 m, 12 II 1951, *Renz 6610*, RENZ! Ibid. 1850 m, 16 X 1953, *Renz 8052*, RENZ! Las Delicias, 1800 m, 5 V 1951, *Renz 6878*, RENZ! **ECUADOR: Carchí:** Maldonado Road Tulcan to Maldonado via Paramo El Angel km 69, 2150 m, *Dodson 16162*, MO! QCNE! Maldonado, km 8.3 al E de Maldonado hacia Tulcán, 2035 m, 30 IV 1993, *Hágsater s.n.* AMO! Ibid. *Hágsater 11293*, AMO! Maldonado Between Tulcan and Maldonado, 2300 m, 2 IV 1984, *Luer 9937*, SEL! **Napo:** Cordillera de Guayacamay, km 139-140 Quito-Tena, 2120-2220 m, *Dodson 14874*, MO! km 117-134, Quito Tena, beyond Cosanga at Cordillera de Guacamay, 1900-2100 m, 17 I 1990, *Dodson 18196*, RPSC x2! **Pichincha:** Road to Maldonado, Maldonado side, past summit of Triunfo Paramo, 2290-2300 m, *Escobar 777*, MO! SEL! **Cotopaxi:** Quevedo-Latacuga, mid portion of road, 1000-2000 m, 10 VI 1975, *Kennedy s.n.* SEL! **Morona-Santiago:** from along road from Macas to Guamonte, 1200 m, *Hirtz 4075*, MO! QCNE! **Loja:** Yangana to Valladolid, km 13.5., 7000 ft, *Hágsater 12322*, AMO x2! Nudo de Sabanilla, W slope on road to Yangana-Valladolid, 2400 m, 8 II 1985, *Harling 21808*, GB! QCA! W slope of Nudo de Sabanilla, c. 8 km above Yangana on road to Valladolid, 2300-2500 m, 2 IV 1985, *Harling 23566*, GB! QCA! Saraguro Above San Pedro, 2300 m, 1 IV 1984, *Höijer 790*, SEL! South of Yangana, Cachaco, 2250 m, 11 V 1981, *Kuhn 86*, SEL! Parque Nacional Podocarpus Entre el camino de la entrada y el refugio de Cajanuma PNP, 2600 m, 7 III 1998, *Lozano 968*, LOJA! Parque Nacional Podocarpus, around entrance to the park on road Yangana-Cerro Toledo, 2600-2800 m, 3 VI 1988, *Ollgaard 74612*, LOJA! **Zamora-Chinchipe:** Road Loja to Zamora, 2150 m, *Dalessandro 450*, MO! Near Zamora, 1000 m, 20 VI 1961, *Dodson 420*, SEL! Km 35 road Loja to Zamora, Site the hydroelectric plant, 1700 m, *Dodson 16107*, MO! ECSF (Estación Científica San Francisco), research station along the highway on the city of the Loja to Zamora approx. at km 30, 1900 m, *Dziedzioch 199*, LOJA! Road Limón, (General Plaza)-Gualaceo, km 20-30 from Limón, 2000-2300 m, 25 III 1974, *Harling 12819*, GB! Road Loja-Zamora, km 16-22 from Loja, 2300-2700 m, 16 IV 1974, *Harling 13654*, GB! Near Km 22 east of Loja, 2000 m, 6 III 1977, *Luer 1547*, SEL! Road Loja-Zamora, km 23, 2100 m, 9 XI 1996, *Lewis 2758*, LOJA! **PERU: Amazonas:** Bongará entre Puente Jumbilla y Abra Pardo, 1800-1900 m, 18 X 1986, *Ferreyra 20634*, USM! **San Martín:** Moyobamba-Bagua road, ca. 110 km from Moyobamba, ca. 1500 m, 20 V 1990, *Kahn 2668*, USM! Along road Rioja-Pedro Ruiz, El Mirador, 1900 m, 26 III 1998, *Werff 15759*, MO!

OTHER RECORDS: NICARAGUA: Jinotega: Top of Jinotega Grade, 4200 ft, *Heller 6400*, Illustration SEL Xerox copy AMO!Cerro Diablo, 4200 ft, *Heller 8219*, tracing by F. Hamer, Xerox copy AMO! **COSTA RICA: San José:** Zona Protegida Caraigres Fila de la Cordillera de Talamanca, 1 km al sur de Casa Mata, 1 VI 1981, *Hágsater 6330*, flowers in spirit AMO! Illustration AMO! **Cartago:** Paraiso, Reserva Natural de Tapantí, 1300-1500 m, 25 IX 1996, *Sánchez 432*, flowers in spirit AMO! **COLOMBIA:** Without locality, *Valdivieso 58*, illustration, xerox copy, AMO! **Antioquia:** Cocorná Santuario-Cocorná, 2000 m, *Duque 202*, photo AMO! **ECUADOR:** Road to Tulcan-Maldonado, 2200 m, 16 III 1991, *Luer 5216*, photo AMO! **Carchí:** Maldonado Km 74.4, camino Tulcán-Maldonado, poblado de Puente Palo, 2000 m, 29 IV 1993, *Hágsater 11372*, flowers in spirit AMO! **Morona-Santiago:** from along road from Macas to Guamonte, 1200 m, *Hirtz 4075*, photo, AMO! Zuñac, Macas Guamote, 2200 m, 1 III 1999, *Hirtz 7248*, photo, AMO! **PERU: Amazonas:** photo by Christenson. **VENEZUELA: Táchira** 16 km north of Las Delicias, 1800 m, *Dunsterville 1193*, Illustration Xerox copy AMO!

EPIDENDRUM LIGNOSUM La Llave & Lex. Plate 1138

OTHER SPECIMENS: MEXICO: Without data, *80-81*, AMES! *Liebman 6859*, US! Comprada en Coyoacan, 26 IV 1981, *Hágsater 5837*, AMO! Ibid. pressed cult. 8 V 1986, *Hágsater 5837*, AMO x4! **Jalisco:** Tapalpa, 2200 m, 23 IV 1979, *Hágsater 5883*, AMES! SEL! (Illustration voucher). Ibid. pressed cult. 26 IV 1980, *Hágsater 5883*, AMO x2! SEL! Ibid. *Hágsater 5884*, AMO! ENCB! Cerca de Cacoma, 2000 m, 22 IV 1982, *González 1196*, ENCB! Northern slopes of Nevado de Colima, above Piedra Ancha, 2400 m, 2 IV 1949, *McVaugh 10160*, AMES! BM! ENCB! G! LL! MEXU! MICH! NY! UC! US! Tecalitlan, 2000 m, *Rosillo de Velasco s.n.*, AMO x3! Ciudad Guzmán, 2300 m, II 1977, *Rosillo de Velasco s.n.*, AMO! **Michoacán:** km 197 carretera Atlacomulco-Morelia, 2300 m, col. 28 V 1996, pressed cult. 14 III 1997, *García-Cruz 800*, AMO! Morelia, *Gallardo OIC-0833*, SEL! km 9.5, Dos Aguas-Coalcomán, 7800 ft, col. III 1979, pressed cult. 26 IV 1980, *Hágsater 5872*, AMO! MEXU! SEL! Ibid. pressed cult. 26 IV 1981, *Hágsater 5872*, AMO! km 122 carretera Atlacomulco-Morelia, 2200-2250 m, 28 V 1996, pressed cult. 11 IV 1997, *Jiménez 1881*, AMO! **Guerrero:** Chilpancingo-Omiltemi, ca. 1900 m, 1976,

Hágsater 1595, AMO! Ibid. pressed cult. 12 V 1979, *Hágsater 1595*, AMO! Ibid. pressed cult. 26 IV 1980, *Hágsater 1595*, AMO! Near Chilapa, ca. 1800 m, *Juan G. 713*, AMES! Near Mochitlan, E of Chilpancingo, ca. 1600 m, *Juan G. 2293*, AMES! S! Parque Estatal Omiltemi (27 km W de Chilpancingo) ca. La Bandera, 2400 m, X 1985, pressed cult. 24 III 1986, *Salazar 1891*, AMO x2! Ibid. Cerro La Aguililla, ladera hacia Potrerillos, 2450 m, *Salazar 1892*, AMO x4! Ibid. *Salazar 1893*, AMO! **Oaxaca:** Without locality, *Hágsater 10306*, AMO x2! Without locality, ca. 1900 m, *O de Velde 6559*, AMES! SEL! Coixtlahuaca, 1.5 km al W de San Antonio Abad, 2300 m, 1 XI 1969, *Cruz 2310*, ENCB! Ibid. Cerro Pericón, 24 km al N de Tamazulapa y a 16 km al N de Teotongo, 2360 m, *García 3069*, MO! Coixtlahuaca, La Cañada oscura, N de Tejupan, 2350 m, 12 IV 1987, *García 3097*, MO! Sierra ca. 2 km al SO de Teposcolula, ca. 2400 m, 12 V 1982, *García 3387*, MEXU! Rio de la Y, km 26, 2200 m, *Hágsater 4590*, AMO! SW of Mihuatlán, 2300 m, 31 III 1934, *Nagel 3720*, AMO x2! AMES! CAS! MEXU! US! Sierra de San Felipe, 8500 ft, 4 VI 1894, *Pringle 5867*, AMES! Ibid. 2 V 1906, *Pringle 10189*, AMES! BM! CM! E! ENCB! F! FI! G x3! K! M! MEXU! MINN! NY! P! UC! US! W! Z! N of Mitla near Santo Domingo, ca. 1900 m, 11 V 1936, *Richards 4616*, AMES! SEL! Zapoquila, Cerro Chicamole, al N de Membrillos, 2730 m, 14 V 1986, *Tenorio 11232*, F! Coixtlahuaca, N de Tejupa, 2280 m, 12 IV 1987, *Torres 9576*, F! **Puebla:** San Luis Tultitlanapa, near Oaxaca, VI 1908, *Purpus 3614*, AMES! MO! UC! US!

OTHER SPECIMENS WITH DOUBTFULL LOCALITY: MEXICO: Edo. de Mexico: Los Remedios, 2300 m, 5 XI 1951, *Matuda 26032*, MEXU! **[Veracruz:]** Huatusco, 1842, *Ghiesbreght 7*, P!

OTHER RECORDS: MEXICO: Without locality, Ibid. *Pastrana 240*, slide AMO! Ibid. *Skinner s.n.*, water color, W 10042! **Guerrero:** Omiltemi, 13 IV 1976, *Hagsater 1594*, slide, AMO! **Oaxaca:** km 23, Río de la Y, 11 III 1977, *Greenwood s.n.*, slide, AMO! San Juan del Pacífico, 20 II 1964, *Lange s.n.*, flower card in Pollard notes, AMO! K-114 Puerto Escondido Highway, III 1964, *Pollard s.n.*, flower card in Pollard notes, AMO! Santa María Albarradas on road to Santo Domingo, 15 I 1973, *Pollard s.n.*, flower card in Pollard notes, AMO! 10.4 mi from Pan Am. Hwy. on Lumber road to Aloapan, 7975 ft, 22 I 1973, *Pollard s.n.*, flower card in Pollard notes, AMO!

EPIDENDRUM MICRODENDRON Rchb.f. Plate 1143

OTHER SPECIMENS: COSTA RICA: Alajuela: La Palma de San Ramon, 1260 m, 24 X 1922, *Brenes 2880*, NY! Zona de San Ramon, 18 VI 1987, *Hurtado 13*, USJ! Traijanes [Fraijanes], 1 VII 1920, *Jiménez 2028*, AMES! Viento Fresco, 1600-1900 m, 13 II 1926, *Standley 47734*, AMES! Yerba Buena, northeast of San Isidro, ca. 2000 m, 22 II 1926, *Standley 50125*, AMES! Ibid. *Standley 50126*, AMES! Cerro Zurqui, northeast of San Isidro, 2000-2400 m, 3 III 1926, *Standley 50686*, AMES! Ibid. *Standley 50726*, AMES!Ibid. *Standley 50729*, AMES! *Standley 50787*, AMES! Cerro de Las Caricias, north of San Isidro, 2000-2400 m, 11 III 1926, *Standley 52422*, AMES! **Cartago:** Cerro de la Muerte, 30 V 1987 *Achi 1*, USJ! Km 68 south of Cartago in Cerro de la Muerte, 8 VII 1986, *Atwood 86-33*, SEL! Cerro de la Muerte, *Biología 51*, USJ! Along Inter-Ameriacan Highway, south of Cartago, Cordillera de Talamanca, km83, 3100 m, 5 IV 1980, *Meerow 1134*, SEL! Illustration AMO! Turrialba, SE slope of Volcan de Turrialba, near the Finca del volcan Turrialba, 2000-2400 m, 22 II 1924, *Standley 35119*, US! Cariblanco, above Capellades, 1600-1800 m, 20 V 1978, *Todzia 282*, CR x2! Volcan Turrialba, 2000 m, 30 VIII 1978, *Todzia 425*, CR! Near El Jardin, Cerro de La Muerte, Cordillera de Talamanca, 2800 m, 17 V 1956, *Williams 20110*, SEL! **Heredia:** Braulio Carrillo Nat. Park Cantón of Barva Station, 2580 m, 10 IX 1990, *Ingram 512*, F! SEL! Barulio Carrillo Nat. Park; Barva Station, about 3 Km SE of Station, 2500 m, 11 IX 1990, *Ingram 517*, SEL! La Arena, Volcan Barba, 2650 m, 8 IV 1951, *Leon 3265*, CR! SEL! **Limón:** Cordillera de Talamanca, Cerro Kámuk massif, between Cerro Dudu and Cerro Apri 2900-3100 m, 23 III 1984, *Davidse 25879*, MO!(Illustration voucher) Cordillera de Talamanca, southwestern foot of Cerro Kámuk, 3200-3350 m, 24 III 1984, *Davidse 25983*, MO! **San Jose:** Cordillera de Talamanca, Pacific slope of Chirripo massif, 3100 m, 6 IV 1969, *Davidse 1628*, AMO x2! SEL! Between Aserri and Tarbaca, 1600-1900 m, 17 I 1924, *Standley 34178*, AMES! Cerro de las Vueltas, 2700-3000 m, 29 XII 1926, *Standley 44020*, US! Zurqui, 2000-2400 m, 13 II 1926, *Standley 48224*, AMES! Ibid. *Standley 48245*, AMES! Along Interamerican highway ca 25.0 km SW of road to La Cima and 4.1 km NW of Cerro Asunción, E end of abandoned section of road, 3180-3220 m, 11 IX 1979, *Stevens 14279*, AMO! F! **PANAMA: Bocas del Toro**: Between Itamut & Bine peaks, Fabrega massiff, Bocas del Toro, Panamá, 3200 m 5 III 1984, *Davidse 22536*, MO! Ibid. *Davidse 22561*, MO! **Chiriquí:** Summit and southwest face of Cerro Copete, 9000 ft, 29 VII 1947, *Allen 4903*, AMES! SEL! Top of Falda del Barú above Cerro Punta and Alto Pineda, 10000-10400 ft, 14 IV 1979, *D'Arcy 13299*, AMO! Cuesta Grande Eastern slope of Chiriqui Volcano, 2600-2990 m, 11 III 1911, *Maxon 5308*, US! E slope of Volcán Barú to top, 10600 ft, 13 III 1979, *Hammel 6387*, MO! Ridge above Alto Pineda, 9000-10400 ft, 15 IV 1979, *Hammel 7107*, AMO!

EPIDENDRUM MUSCIFERUM Lindl. Plate 1147

OTHER SPECIMENS: PANAMA: Bocas del Toro: Old Bank Isl. vicinity of Chiriqui Lagoon, 14 II 1941, *Wedel 2081*, AMES! BM! US! **Chiriquí:** Burica Peninsula, San Bartolo limite, 12 mi West of Puerto Armuelles, 400-500 m, 24 II 1973, *Liesner 190*, AMES! F! L x2! LL! MO! NY! **Panama:** Barro Colorado Island, Canal Zone, 18 IV 1970, *Croat 9793*, MO! Barro Colorado Island, Balboa, Canal Zone, 0 m, *Powell 41*, AMES! K! MO! **Coclé:** Coronado, pressed cult. 29 III 1984, *Hágsater 6389,* AMO! Ibid. pressed cult. 22 X 1984, AMO x4! **Darién:** Púcuro, Parque Nacional Darién, vecindad de la Estación Pirre, en la trocha limítrofe entre el camino a Cerro Pirre y Balsas, 60-150 m, 12 II 1991, *Herrera 961*, AMO! MO! **COLOMBIA:** Without locality, *Ortíz 363*, P.O.V.! S. Jose, *B. J. 271*, AMES! N Coast of Colombia, *Cumming 1288*, E! W! North Coast of Colombia, *Cumming 1298*, E! Río Guaviare, 17 XII 1984, *Ospina 1138*, COL! **Antioquia:** Cocorná, cultivado en Guarne, 1800 m, *Escobar 5139*, AMO! (flowers in spirit) **Cundinamarca:** Zipaquirá, Pacho-La Palma Highway, 1000 m, 30 VII 1947, *Haught 6015*, COL! US x2! **Risaralda:** La Virginia, Monte de "El Rhin" via La Virginia-Apia, *Ospina 337*, JAUM! Pereira: Hacienda Alejandría, Km 6 carretera La Virginia-Cerritos, lomas bajas en extremo norteño de parte ancha del Valle del Rio Cauca, ca. 940 m, 7 V 1989, *Silverstone-Sopkin 5195*, AMO! CUVC! MO! **Valle del Cauca:** Dagua Rio Timbiqui, *Forest 270*, L! La Delfina, 24 I 1960, *Guarín 80*, COL! **VENEZUELA:** Soraté, 1 IX 1956, *Dunsterville 377*, K Illustration! Anzoátegui, Along rio Leon by Quebrada Danta, tributary to Rio Neveri, northeast of Bergantin, 500 m, 21 II 1945, *Steyermark 61065*, F! **Nueva Esparta:** Isla La Margarita, Juan Diego trail, 12 VIII 1903, *Johnston 232*, AMES! Isla Margarita, El Valle, 29 VII 1901, *Miller 269*, AMES! **Falcón:** Península de Paraguaná, Cerro Sta. Ana, 13 IV 1917, *Curran 718*, AMES! **Táchira:** Quebrada Buenaña, rechten Naben flum der Rio Uribanta, 400 m, 13 III 1951, *Renz 6669*, RENZ! **Delta Amacuro:** Antonio Díaz Punta Barima, 0 m, 1 II 1987, *Fernández 3874*, MO! **Bolivar:** Salto

de Pará, medio Caura, 200 m, 7 III 1939, *Williams 11430*, AMES! **GUYANA:** Northwest Waini River, Marabo Shortcut, 6 II 1922, *De la Cruz 1276*, AMES! Ibid. *De la Cruz 1278*, AMES! CM! F! Pomeroon Kabakaburi, 14 II 1923, *De la Cruz 3277*, AMES! Rupununi Kumukowau R., Camp 3, along river, 160 m, 13 II 1994, *Jansen-Jacobs 3751*, U! Basin of Kuyuwini, river (Essequibo tributary), about 130 miles from mouth, 21 XI 1937, *Smith 2543*, AMES! K! Western extremity of Kanuku, in drainage of Takutu River, 600 m, 4 III 1938, *Smith 3291*, AMES! G! K! LE! U! W! **SURINAM:** Without locality, *Hokeacher 570*, P! Ibid. 1 I 1846, Ibid. *Lindley 516*, W! Ibid. *Splitgerber 331*, W! Ibid. *Wright 46*, W! Brokopondo District, bank of Marowijne Creek (=Gran Creek) S of Brokopondo-lake, 21 X 1966, *Donselaar 3812*, U! Fluv. Saramacca inferior, Jarikaba-kreek, inter, Uitkijk et Groningen, 25 XI 1960, *Kramer 2188*, U! Along secondary fall of Raleigh falls, Botopassie, Upper Coppename r., 1 X 1958, *Mennega 349*, U! **FRENCH GUIANA:** Riviére Mana; Saut Ananas, forêt á l'Ouest du Saut, 13 VIII 1981, *Cremers 7496*, CAY! Region de Paul Isnard; piste autour de Citron, 8 XI 1982, *Feuillet 294*, CAY! Saul, Grand Circuit "Boeuf Mort", 250 m, 4 XI 1974, *Maas 2288*, U! Ile d'Antekoumpata, Haut-Maroni, 1 VIII 1976, *Moretti 560*, CAY! Saul region, along trail 14 (Trace Belvedere Nord) & 16 (junction La Douane-Belvedere), beyond airport near Crique, SE of Saul, 200-210 m, 30 X 1986, *Skog 7174*, US! Saul region, Trail No. 5,2 SW of Saul, at beginning of trail to Monts Galbao, 206-210 m, 4 XI 1986, *Skong 7248*, US! **BRAZIL: Amapá:** Rio Jari, Between Cachoeira Macuru and Cach, do Repoto, ca. 160 m, 21 VIII 1961, *Egler 46585*, HB! NY! Rio Oiapoque, Second cachoeira on Rio Iaue, 3 km east of confluence with Rio Oiapoque, 26 VIII 1960, *Irwin 47826*, HB! RB! **Amazonas:** Behind Santa Maria west bank of Rio Acre, opposite Boca do Acre, 17 IX 1966, *Prance 2365*, HB! K! MG! NY! US! **Goiás:** Pr. Formosa a 80 km de Brasilia, 20 VI 1963, *Heringer 8915*, HB! **Minas Gerais**: Coronel Pacheco, 23 VI 1942, *Heringer 1081*, SP! Prine, pr. Formiga, Cesto de Minas, 6 V 1956, *Walter 173*, HB! **Distrito Federal:** Brasilia, 19 VII 1965, *Haringer 10463*, HB! **Sao Paulo:** Pr. Tequaritinga, 29 V 1972, *Seidal 1036*, HB! **Rio de Janeiro:** Petropolis, Raiz da Serra, 1 V 1932, *Spannagel 331*, SP! **Pando [Rondonia]:** W bank of rio Madeira between Cachoeiras, Madeira and Misericordia, 29 VII 1968, *Prance 6606*, COL! HB! MO! US! **Pará:** Without locality, *Comsanhi s.n.*, HB! Altamira, km 74 da estrada Transamazonica no rumo de Itaituba, 25 VII 1971, *Cavalcante 2796*, MG! Apeú, 1 VIII 1968, *Cortés 42*, HB! Serra do Cachimbo, 1 VI 1956, *Sinck s.n.*, HB! **ECUADOR:** Region Intag; an Flussufer der Rio Intag, 900 m, 9 X 1934, *Heinrichs 764*, M! Westkordillere, Flupufer des Rio Hitag, 900 m, 9 X 1934, *Heinrichs 769*, G! Quito-Lita, 1 I 1984, *Hirtz 1468*, AMO! Am duepsa den Cordilleren uber Naranjal bei Guayaquil, ͵00 m, 10 X 1879, *Lehmann 295*, W! **Azuay:** Girón Road from Giron to Pasaje, 2500 ft, *Plowman 4608*, AMES! **Carchí:** Maldonado Prominent hillcrest directly N of Lita, on N side of Rio Mira and just to E of Rio Baboso, on steep W-facing slope, 760 m, 1 VII 1994, *Boyle 3253*, QCNE! Maldonado Parroquia Tobar Donoso, Sector Sabalera, Reserva Indigena Awa, 650-1000 m, 19 VI 1992, *Tipaz 1515*, MO! QCNE! **Esmeraldas:** km 5-18 on road Lita to Alto Tambo, alongside recently opened road, 670-750 m, Dodson s.n., MO! Along road under construction from Lita to Alto Tambo (21 kms), along roadside from km 13 to 20, 750-850 m, *Dodson 17122*, MO! Lita Near rio Lita, ca. 500 m, 6 X 1980, *Maas 4758*, QCA! SEL! U! Environs of Lita, on the Ibarra-San Lorenzo, 550-650 m, 1 VI 1978, *Madison 4988*, SEL! Ibid. *5148*, SEL! **Manabí:** Near Campo Sano, ca. 200 m, 17 XI 1940, *Haught 3093*, US! **Los Ríos:** Quevedo, Carretera Quevedo-Latacunga, ca. Km 3, 70 m, 26 IV 1960, *Dodson 40*, MO! SEL! Quevedo 6 Km east of Quevedo on raod Quevedo-Latacunga, 80 m, 27 V 1976, *Dodson 6080*, SEL! Quevedo, Surrondings of Montalvo (foothills of the Andes, ca. 40 Km E of Babahoyo), 100-200 m, 30 III 1973, *Holm-Nielsen 2783*, AMES! SEL! **Imbabura:** Chaguaraco, Cordillera Occidental, above Rio Chalguayaco, below Magnolia lower Intag Valley, 3500 ft, 15 IX 1944, *Drew 625*, AMES! **Pichincha:** Alluriquin, 25 IV 1982, *Hágsater 6067*, AMO! (Illustration voucher) ENCB! MEXU! Reserva Florística Ecologica, Río Guajalito, 1800-2000 m, 1 X 1994 *Rudolph 452*, QCNE! 38.6 Km N of Zacaray, Hotel in Santo Domingo on Santo Domingo-Quito rd 3650 ft, 1 VIII 1980, *Sauleda 3857*, SEL! Road along Santo Domingo, Toáchi, at the confluence between Rio Pilatón and Rio Toáchi, ca. 850 m, 2 VIII 1967, Sparre 17824, S x2! Alluriquin, along small river 5 km S from the village, 1000 m, 19 X 1981, *Werling 448*, QCA x2! **Napo:** La Cruz, along the Rio Napo in the region of Misahualli and inland, 450-500 m, *Suárez 181*, MO! **PERU: Tumbes:** Zarumilla Matapalo, 720 m, 28 X 1992, *Diaz 5265*, CAS! USM! **Loreto:** Rio Pucata, San Juan Pucata, 90 m, 24 XI 1992, *Carpio 1845*, MO! USM! Puerto Arturo, lower Río Huallaga below Yurimaguas, ca. 135 m, 24 VIII 1929, *Killip 27746*, US! Vicinity of Iquitos, 100 m, 1 IV 1936, *Klug 10039*, AMES! K! US! Sacarita de Yanayacu, east bank of rio Amazonas near Northern most Padre Isla, 7 VIII 1973, *McDaniel 17633*, MO! Maynas Dtto. Iquitos, cerca a la desembocadura del rio Nanay, 1 XI 1976, *Revilla 1721*, USM! Indiana, Maynas, Río Amazonas, Quebrada de Yanayacu, 90 m, 16 VIII 1985, *Rimachi 7971*, MO! Coronel Portillo, Dtto. Iparia, Bosque Nacional de Iparia, Region a lo largo del Rio Pachitea cerca del campamento Miel de Abeja, 1 km arriba del pueblo de Tournavista o a unos 20 km arriba de la confluencia con el Rio Ucayali, 300-400 m, 21 VI 1967, *Schunke 2068*, F! Coronel Portillo Dtto. Iparia, Bosque Nacional de Iparia, Region a lo largo del Rio Ucayali cerca del pueblo de Iparia, unos 80 km arriba de la confluencia con el Rio Pachitea, Trocha a la quebrada de Tabacoa, al W de Iparia, 300 m, 31 VIII 1968, *Schunke 2734*, F! Maynas Iquitos, Alpahuayo-IIAP, 150-180 m, 6 VII 1991, *Vásquez 17054*, MO! **Amazonas:** Rio Utcubamba, Bagua, Rio Utcubamba, on cerro Tapur an hour's jeep ride above Hacienda Misqui ca 40 km south of Bagua Grande, 1200 m, *Hutchison 1519*, AMES! F! MO! UC x2! USM! **San Martín:** Coronel Portillo Ca. 30 Km, SW of Pucallpa-Tingo María road on new Carretera Marginal, ca. 300 m, 29 VI 1987, *Gentry 58611*, MO! Pongo de Cainaracachi, Río Cainaracachi, Tributary of Río Huallaga, 230 m, 1 IX 1932, *Klug 2602*, AMES! G! K! MO! S! Pongo de Cainarachi, Rio Cainarachi, Tributary of Rio Huallaga, 230 m, 1 IX 1932, *Klug 2602*, F! Rioja Dist. Pardo Miguel, La Sabana, sector huasta, parte alta del Río May, 900 m, 9 XI 1996, *Sánchez 8569*, AMO! F! **Ucayallí:** El Sacramento, 89 km sudl Pucallpa, Regenwald auf Vergel, 240 m, 23 VII 1957, *Ellenberg 2529A*, U! **Huánuco:** Tingo Maria, 19 VIII 1940, Asplund 13199, S! Leoncio Prado, Probably from Tingo Maria area, Huanuco, 17 IX 1966, Bennett 2321, UC! **Lima:** from the living collection of Davis E. Bennett, 20 VIII 1965, *Bennett Jr. 1723*, UC! **Junín:** Valle del Chanchamayo, "El Refugio", San Ramón, cultivada, procedente del bosque, 800 m, cultivada, 2 VI 1983, *Fernández 219*, USM! Ibid. 30 V 1984, *Fernández 439*, USM! Chanchamayo, valley between San Ramon and La Merced, ca 3 km from San Ramon, ca. 790 m, 17 II 1965, *Hutchinson 4126*, AMES! UC! Rio Negro, alt. Junin, 800 m, 19 VIII 1960, *Woytkowski 5847*, MO! **Madre de Dios:** Parque Nacional del Manu, Rio Manu, Cocha Cashu Station, 350 m, 1 XI 1980, *Foster 5707*, F! Ibid. 350 m, 9 VII 1984, *Foster 9594*, F! MO! USM! Ibid. 3 VIII 1989, *Foster 12906*, USM! Cocha Cashu Biological Station, Manu National Park, ca. 400 m, 8 VIII 1983, *Gentry 43415*, MO! Ibid. 1 VIII 1983, *Gentry 43287*, MO! Tambopata, Cuzco Amazónico, Tourist Lodge, Trail 1, 15 Km NE of Puerto Maldonado, 200 m, 27 V 1989, *Nóez 10499*, MO! Tambopata Cuzco Amazonico, 200 m, 21 V 1989, *Phillips 71A*, MO! Tambopata, Cuzco Amazonico, Plants from Biodiversity Project Site (mature floodplain), 200 m, 21 VI 1989, *Phillips 541*, CUZ! Ibid. *Phillips 591*, MO! **BOLIVIA:** Without locality, *White 1469*, AMES! Dapuna, 21 IX 1901, *Williams 733*, NY! **Pando:** Manupiri, Ca. 18 Km south of rio Manuripi on the road to Chivé, ca. 250 m, 6 VIII 1982, *King 6505*, SEL! W bank of Rio Madeira between Cachociras Madeira and Misericordia, 29 VII 1968, *Prance 6606*, AMES! K! P! S! U! Amazon Basin, 1500 ft, 7 X 1921, *Rusby 823*, AMES! **Cochabamba:** Carrasco, Puerto Villarroel, 200 m, 1 V 1978, *Vásquez 34*, SEL!

OTHER RECORDS: COLOMBIA: Without locality, *Ortíz 363*, Illustration AMO! Flora de La Real Expedición Botánica del Nuevo Reino de Granada, *Celestino 42*, illustration AMO! Orquídeas Nativas de Colombia vol 5, suplemento, pg 756, foto 866. Without locality, *Escobar s.n.*, slide AMO! **ECUADOR: Pichincha:** Santo Domingo de los Colorados Lita, 1000 m, 1 I 1984, *Hirtz 1468*, flowers in spirit AMO! **PERU:** Zarumilla Matapalo, Parcela "V" de valuación permanente, 720 m, 28 X 1992, *Diaz 5265*, flowers in spirit AMO! **VENEZUELA:** Sorató, 1 IX 1956, *Dunsterville 377*, K Illustration!

EPIDENDRUM OERSTEDII Rchb.f. Plate 1151

OTHER SPECIMENS: Without locality, Cult. Kopenhagen, *Oersted s.n.*, W! **HONDURAS:** Without locality, 1 VII 1977, *Ackerman 1016*, SEL! Ibid. 27 VI 1977, *Mathews s.n.*, SEL! Ibid. *Roskelley 1791*, SEL! Finca Fe, 670 m, 28 V 1981, *Siegerist 691*, SEL! Ibid. *Siegerist 692*, SEL! **Francisco Morazán:** Quebrada de Los Miados 4 Kms de Guaimaca, 800 m, 14 VI 1950, *Molina 3094*, SEL! US! **El Paraíso:** El Paraíso; Moroceli, Quebrada Güisisire, ca 7 km al N de Morocelí, por el camino a Mata de Plátano, 830 m, 10 IV 2001, *Knoblauch 14*, MEXU! A 11 km al E de El Zamorano, camino a Danlí, 820 m, 29 V 1985, *Martínez 12548,* AMO! **NICARAGUA: Chontales;** Sierra Amerrisque, Cerro Los Andes, 10 Km al E of Juigalpa, 2 VI 1976, *Neill 7282*, SEL! Along road from Juigalpa NE toward La Libertad, ca. 11.1 Km NE of Río Mayales, ca. 300 m, 25 IX 1977, *Stevens 4217*, SEL! 3.9 Km N of Comalapa on road to Camalapa, ca. 460 m, 19 V 1980, *Stevens 17202*, SEL! **Jinotega:** Macizo de Peñas Blancas, 4050 ft, *Heller 2358,* SEL! (as *Heller 8523*) **Madriz:** Cerro Quisuca, 1100-1250 m, 31 V 1980, *Stevens 17359*, MO! SEL! **Estelí**: ca. 400 m, 28 VI 1970, *Ackerman 939*, SEL! ca. 400 m, 4 VII 1978, *Ackerman 1205*, SEL! 400 m, 10 VI 1975, *Weinhold s.n.*, SEL x2! **Matagalpa:** Rocky hillside near Matagalpa, 29 VII 1980, *Alan 3969*, SEL! Cerro Apante, 1000-1400 m, 4 IV 1980, *Moreno 164*, SEL! **Granada:** Finca Mecatepac, Río Manares, ca. 18 Km al S de Granada, 15 VI 1984, *Soza 47*, SEL! **COSTA RICA:** Without locality, *Endres s.n.*, W! Ibid. *Endres 10*, W! Ibid. VII 1978, *Hágsater 5605*, AMO! Ibid. 14 VII 1978, *Hágsater 5605*, AMO! Ibid. 20 V 1933, *Valerio 189*, CR! Parque Bolivar, 9 V 1935, *Valerio 1022*, CR! **Guanacaste:** Sta. Elena-Quebrada Grande, 2.7 km después de Cabeceras, 1000 m, 26 I 1988, pressed cult. 23 VIII 1996, *Hágsater 9462*, AMO x4! Ibid. pressed cult. 25 VII 1998, AMO x2! Ibid. pressed cult. 21 VIII 1998, AMO x6! **Heredia:** Santo Domingo, 1300 m, 1 V 1997, *Solera 51*, USJ! **Puntarenas:** Cordillera de Tilarán, San Luis, por el camino Las Minas. La Guaria. Guacimal, 800 m, 19 IV 1994, *Fuentes 733*, INB! Coto Brus, Río Corton, Tajo Buena Vista above Las Alturas, 1600 m, 20 VI 1979, Todzia 614, CR! **San José:** Valle del Río Candelaria al SW de Acosta en orcas del Alto de la Escalera, 900 m, pressed cult. 5 VII 2004, *Hágsater 6420*, AMOx2! Vertiente Pacifica, bordeando el sur de la fila de la escalera al SW de San Ignacio de Acosta, 1000-1200 m, 25 IX 1984, *Hágsater 6756*, AMO! **PANAMA: Los Santos:** 7 Km up Río Horcones from Pacific coast, 26 V 1992, *Akers 592-1*, SEL! **Chiriquí:** Chiriquí, Boquete, around El Boquete, 1000-1300 m, 6 III 1911, *Pittier 3048*, US!

OTHER RECORDS: NICARAGUA: Jinotega: Macizo de Peñas Blancas, 4050 ft, *Heller 2358* illustration Xerox copy AMO! **COSTA RICA: San José:** Valle del Río Candelaria al SW de Acosta en orcas del Alto de la Escalera, 900 m, *Hágsater 6420*, Illustration AMO! flowers in spirit AMO!

EPIDENDRUM PALLENS Rchb.f. Plate 1153

OTHER SPECIMENS: COSTA RICA: Without data, *Hübsch s.n.*, W-R 6123! Ibid. W-R 6124! **Alajuela:** Fraijanes, VII 1920, *Jiménez 2029*, AMES! **Cartago:** P.N. Chirripó, Llano Bonito, 2400-3200 m, 29 VII 1996, *Alfaro 620*, INB! MO! near La Georgina, *Atwood* Jr. *86-67*, F! Volcán Irazú-Volcán Turrialba, ca. 2400-2800 m, 17 IX 1965, *Bernardi 10599*, G! Volcán Irazú, 9000 ft, 24 II 1957, *Carlson 3560*, F! SE slopes of Cerro de la Muerte, 2700 m, 23 V 1976, *Croat 35439*, MO! Paraiso, sendero La Catarata, 2650 m, 2 III 1996, *Gamboa 350*, MO! Ibid. *Gamboa 394*, INB! P.N. Chirripó, 4 km E de Villa Mills, 2700 m, 5 VII 1996, *Gamboa 428*, INB! MO! Chirripó Grande, 3000 m, 28 VIII 1971, *Gómez 3401*, CR! camino al crater del Volcán Turrialba, ca. 3000 m, 12 X 1978, *Gómez 4109*, USJ! Chirripó Grande, 3000 m, 27 IV 1932, *Kupper 1230*, M! Irazú, 8500-9500 ft, 30 IX 1923, *Lankester s.n.*, AMES! Irazú, 8000-9000 ft, IX 1923, *Lankester 517*, AMES! Ibid. 9000-10000 ft, X 1950, *Lankester 1569*, UC! near km 75, Pan. Am. Hwy. up Talamanca Range, 2800 m, 2 VIII 1967, *Lent 1174*, CR! F! Irazú, 3000 m, 27 XII 1987, *Lehmann 1047*, G! Cerro de La Muerte, 3100-3200 m, 7 VII 2000, *Morales 7317*, INB! Volcán Turrialba, 2000 m, 1 I 1899, *Pittier 13225*, AMES! US! Volcán Turrialba, 2000-2400 m, 22 II 1924, *Standley 34961*, AMES! US! SE slope of Volcán Turrialba, 2000-2400 m, 22 II 1924, *Standley 35225*, F! US! Volcán Irazú, 1425 m, 5 III 1924, *Standley 36633*, AMES! US! near Coliblanco, above Capellades, 1600-1800 m, 19 V 1978, *Todzia 273*, F! Volcán Turrialba, 2000 m, 30 VIII 1978, *Todzia 424*, CR x2! Coliblanco, at km 28 on road to Irazú, ca. 3000 m, 22 VIII 1961, *Weber 6031*, AMES x2! **Heredia:** P. N. Braulio Carrillo, Estación Barva, 20 VI 1990, *Apu 82*, INB! **Puntarenas:** Coto Brus, sendero a Cerro Echandi, 2700 m, 17 V 2000, *Alfaro 3177*, INB! Cerro Burú, 2000-2300 m, 20 VIII 1983, *Davidse 23798*, MO! **San José:** Cuenca Terraba-Sierpe, 1700 m, 2 V 1997, *Aguilar 5043*, INB! Road to Dota, *Atwood 86-50*, MO! Ibid. *Atwood 86-78*, AMO! (Illustration voucher) MO! Cuenca Terraba-Sierpe, 2400-3200 m, 16 VII 1998, *Alfaro 1710*, INB! Cerro Buenavista, 3180 m, 15 VII 1998, *Blanco 904*, USJ! Canaán to Chirripó, N of the Río Talari, ca. 2900-3000 m, 20 VIII 1971, *Burger 8254*, F! Ibid. 3100-3200 m, 24 VIII 1971, *Burger 8345*, CR! F! MO! NY! circa de Guayabillos, 2300 m, 23 V 1930, *Cufodonti 497*, AMES! W! Cuenca Terraba-Sierpe, 3400 m, 3 V 1997, *Gamboa 1320*, INB! 12 km después del Copey, 2630 m, 12 VIII 1997, *Pupulin 422*, USJ! La Georgina, 2 km NW of Villa Mills, 3100 m, 8 VIII 1976, *Solomon 2550*, MO! Las Nubes, ca. 1500-1900 m, 20 III 1924, *Standley 38905*, AMES! US! NE El Copey, 2000-2200 m, 16 XII 1925, *Standley 41933*, AMES! US! Ibid. *Standley 42032*, AMES! US! Ibid. *Standley 42081*, AMES! Laguna La Chonta, NE de Santa María de Dota, 2000-2100 m, 18 XII 1925, *Standley 42147*, AMES! Ibid. *Standley 42321*, AMES! US! Cerro de Las Vueltas, 2700-3000 m, 29 XII 1925, *Standley 44002*, AMES! Pan. Am. Highway, 1800 m, 17 VII 1978, *Todzia 370*, CR! **PANAMA: Chiriquí:** above Alto Pineda, 9800 ft, *Hammel 7130*, AMO!

OTHER RECORDS: COSTA RICA: Without locality, 1 IX 1966, *R. L. Rodríguez 430*, xerox of illustration, AMO!

EPIDENDRUM PALMENSE Ames

Plate 1154

OTHER SPECIMENS: COSTA RICA: Without locality: *Hágsater 7695,* AMO! USJ! **Alajuela**: La Palma, 1 I 1910, *Brade 1200,* AMES! La Palma de San Ramón, 1100 m, 16 I 1927, *Brenes (101) 1582,* CR! Road to Volcán Poás, 4.3 km from Vara Blanca, 1900 m, 7 III 1984, *Chase 84337,* CR x3! Caña Chica entre El Alto de Villegas y Angeles norte de San Ramón, 1250-1550, *Hágsater 7192,* CR! AMO! MO! Cantón Alfaro Ruíz, Palmira, 2000 m, 10 VIII 1938, *Smith H1089,* AMES! K! SEL! Peña de Zarcero, 1450 m, 22 VIII 1938, *Smith 1110,* AMES! Vicinity of Fraijanes, 1500-1700 m, 12 II 1926, *Standley 47629,* AMES! US! Isla Bonita, Volcán Poás, 22 VII 1942, *Taylor 450,* AMES! La Palma, 1400, 22 VI 1978, *Todzia 321,* CR! **Cartago**: Carpintera, 5000 ft, 23 V 1928, *Danielson 2142,* AMES! Finca Palmital, carr. #2, 38 km S de Cartago, 1800-1850 m, 25 III 1981, cult. 19 IV 1983, *Hágsater 6307,* AMO! (Illustration voucher) Ibid., cult. 22 VI 1984 AMO! CR! QCNE! Ibid., cult. 18 II 1985, AMO! Ibid., 21 II 1986, AMES! AMO! US! Ibid., 1 XII 1988, AMO! MO! SEL! Valley of Orosi, 15 km. SE of Cartago, 10 VIII 1949, *Holm 990,* MO! La Carpintera, 5000 ft, 20 V 1928, *Stork 2094,* AMES! Alto de la Estrella, 16 III 1924, *Standley 39574,* AMES! **Heredia**: Los Angeles, *Brenes 1911,* NY! Arriba de San Jerónimo en camino a la Hondura, cult. 3 VII 1982, *Hágsater 6677,* AMO! Pastures above Cerro La Cruz, 8 km NW of Heredia, 1 III 1970, *Lent 1907,* F! CR! Parque Nac. Braulio Carrillo Porrosatí, a 200 m del puente sobre el Río Ciruelas, 1900 m, 26 V 1990, *Rivera 354,* AMO! 1.1 km S of Vara Blanca de Sarapiquí, ca. 8000 ft, *Smith 107961,* FLAS! Yerba Buena, northeast of San Isidro, ca. 2000 m, 22 II 1926, *Standley 49272,* AMES! US! Ibid., *Standley 49076,* AMES! US! Los Cartagos, slopes of Volcán Barba, 2000 m, 24 IV 1956, *Williams 19307,* SEL! **San José** Montaña del Cedral, fila del Cedral, subiendo al cerro Daser, *Hágsater s.n.,* cult. 20 III 1982, AMO! Fila del Cedral, cerro Daser, arriba de Tarbaca, ca. 2000 m, 27 VI 1983, *Hágsater 6742,* AMO! Ibid., cult. 24 III 1992, *Hágsater 9913,* AMES! AMO! (Illustration) SEL! Cerro Cedral, 1800-2400 m, 25 VI 1962, *Horich 58.259-1,* MO! Without locality, 1800 m, *León 831,* CR! Cantón de Aserrí, Z.P. cerros de Escazú, cerros Escazú-La Carpintera, El Cedral, Alto Hierbabuena, 2200 m, 19 V 1994, *Morales 2961,* AMO! La Hondura, 1300-1700 m, 16 III 1924, *Standley 37656,* AMES! US! Zuriquí, 2000-2500 m, *Standley 48334,* AMES! San Cristóbal road, 8000 ft, 27 V 1928, *Stork 2237,* AMES! **Puntarenas**: R. B. Monteverde, cordillera de Tilarán, cerro Ojo de Agua, estación Leonel Hernández, 1600 m, 24 VIII 1993, *Bello 5253,* AMOx2! **PANAMA**: **Chiriquí:** Alto de Guayabo, trocha 3 de noviembre, north of Cerro Pinola, 1500-1900 m, 25 IX 1976, *Dressler 5491,* AMO!

OTHER RECORDS: **COSTA RICA**: Illustration Rafael Lucas Rodríguez slide AMO! Cedral de Aserrí, 2500 m, 19 marzo 1966, *C. Dodson & R. L. Rodríguez*, drawing, xerox & transparency at AMO!

EPIDENDRUM PILIFERUM Rchb.f.

Plate 1160

OTHER SPECIMENS: GUATEMALA*: Without locality, pressed cult. 3 VII 1981, *Behar sub Hágsater 5373*, AMO! Ibid. 27 VI 1983, AMO! Ibid. 21 VII 1989, AMO! Ibid. 7 VII 1991, AMO! Ibid. 21 VIII 1986, AMO! [**Alta Verapaz:**] San Julián, col. 11 I 1976, pressed cult. 3 VII 1981, *Hágsater 5380*, AMO! Ibid. 10 II 1989, AMO x2! Ibid. 3 III 1990, AMO x2! Ibid. 31 III 1991, AMO! Ibid. 7 VII 1991, AMO! Ibid. 18 IV 1992, AMO! **COSTA RICA:** Without data, BR! Ibid. *216*, W-R 9309! Without locality, 1882-1885, *Hübsch s.n.* W-R 6117! Ibid. W-R 6841! Ibid. 12 Exposición Asociación Costarricense de Orquideología, 18 III 1982, *ACO 557*, AMO! Without locality, 24 VI 1875, *Polakowsky 139*, BM! San Isidro, 28 I 1988, pressed cult. 21 III 1990, *Hágsater 9523*, AMO! Ibid. 31 III 1991, AMO! Santa Marta de Essequirres, Dos X, 11 I 1988, pressed cult. 11 IV 1989, *Hágsater 9528*, AMO! (Illustration voucher) Ibid. 18 IV 1989, AMO! Ibid. 16 II 1990, AMO! Ibid. 11 I 1991, AMO x2! Río Tarrazu, IV 1893, *Tonduz 7900*, AMES! BR! US! Parque Bolivar, 30 IV 1935, *Valerio 1019*, F! **Alajuela:** Candelaria, 1600 m, 12 III 1909, *Brade 1192*, AMES! below Alto Palomo, 1820 m, 29 VI 1971, *Lent 1972*, F! Zarcero, 26 VII 1937, *Smith 1*, F! Ibid. 4700 ft, *Smith 233*, F! Guadalupe de Zarcero, 1550 m, 20 V 1938, *Smith 642*, AMES! K! San Luis de Zarcero, 1550 m, 1 V 1938, *Smith 714*, AMES! F! **Cartago:** El Muñeco, 1160-1250 m, 19 III 1986, *Almeda 5602*, CAS! Tres Ríos, Dulce Nombre, 28 VI 1987, *Centeno 22*, USJ! San Ramón de Tres Ríos, 1500 m, 19 VI 1984, *Gómez 23033*, AMO! CR! F! MEXU! MO! Llano Grande, ca. 2250 m, 28 I 1988, pressed cult. 14 IV 1989, *Hágsater 9529*, AMO! Ibid. 18 IV 1989, AMO! Ibid. 3 III 1990, AMO! Ibid. 22 IX 1989, *Hágsater 9532*, AMO! Ibid. 17 VI 1990, AMO! Ibid. 2 XI 1993, AMO! Carpintera, 1650 m, 3 IV 1932, *Kupper 954*, M x5! Between Río Taus & Quebrada Azul, 760 m, 28 V 1972, *Lent 2547*, F! Cerro de la Carpintera, 1500-1850 m, II 1924, *Standley 34281*, US! Dulce Nombre, 1400 m, 27 II 1924, *Standley 35951*, AMES! US! La Estrella, 26 III 1924, *Standley 39548*, US! Naranjo, 5500 ft, 4 V 1928, *Stork 1849*, AMES! Tablazo, 1500 m, 17 III 1978, *Todzia 233*, CR! Naranjo, 4 VII 1857, *Wendland 1100*, W-R 49560! **Heredia:** Vara Blanca, 1600-1700 m, 22 VII 1923, *Maxon 8330*, US! Río Ciruelas, 15 III 1890, *Tonduz 2354*, AMES! BM! BR! M! US x2! Z! **Limón:** Llanos de Santa Clara, 900 ft, II 1896, *Smith 689*, AMES! US! **Puntarenas:** Río Kuiyé, 1530 m, 11 III 1993, *Bittner 1725*, INB x2! Tres Colinas, 1800-1850 m, 20 III 1984, *Davidse 25681*, AMO! CR! MO! Monteverde, 1000-1200 m, 18 VI 1985, *Hammel 13904*, CR! MO! Estación Bilógica Pittier, 1680 m, 28 I 1995, *Navarro 5*, MO! Ibid. 1400-1660 m, 1 X 1996, pressed cult. 20 II 1998, *Sánchez 450*, AMO x2! Ibid. pressed cult. 27 XI 1998, AMO x3! Ibid. pressed cult. 9 I 1997, *Sánchez 451*, AMO! pressed cult. 8 I 1999, AMO! **San José:** Altos de Tablazo, 1675-1900 m, 24 IV 1987, *Grayum 8275*, MO! San Isidro del General, ca. 1000 m, 8 III 1986, *Hágsater 8180*, AMO x3! Ibid. pressed cult. 19 V 1989, AMO! Ibid. 26 V 1989, AMO! Ibid. 31 I 1991, AMO! Ibid. 23 V 1993, *Hágsater 8181*, AMO! Ibid. 30 VII 1989, *Hágsater 8182*, AMO x2! Ibid. 11 I 1991, AMO x3! Ibid. 7 III 1992, AMO! Ibid. 8 IV 1992, AMO x2! Cerro Bares, 1550 m, 31 III 1990, *Jiménez 837*, F! QPLS! MO! Jericó de Desamparados, 1470 m, 21 VI 1992, *Ossenbach 348*, USJ x2! Cerro Piedra Blanca, 31 I 1924, *Standley 32491*, AMES! US! Pedro Montes de Oca, 1200 m, 29 II 1924, *Standley 36114*, US! La Hondura, 1700-1800 m, 16 III 1924, *Standley 37650*, AMES! Tablazo, 4 V 1933, *Valerio 186*, CR! F! **PANAMA: Chiriqui:** Without locality, W-R 49571! Ibid. IV 1858, *Wagner s.n.*, M x2! Ibid. 3500-4000 ft, 4 V 1920, *Powell 150*, K! Ibid. 4500 ft, *Powell 233*, MO! Boquete, 1000-1500 m, 17 III 1918, *Cornman 2057*, US! Between Bambito and Cerro Punta, 30 V 1970, *Croat 10632*, MO x2! N of Audobon cabin, 20 II 1971, *Croat 13612*, ENCB! MO x2! Volcán and Serrano, 15 VI 1987, *Croat 66235*, MO! Bajo Mono, 4500 ft, 30 III 1938, *Davidson 457*, F! MO! US! Boquete, 6000 ft, 3 VIII 1960, *Ebinger 665*, MO! US! Cerro Pando, ca. 2200 m, ca. 2200 m, 24 VIII 1982, *Hamilton 996*, AMO! MO! Cerro Punta, 5500 ft, 1 III 1967, *Kozlovsky K-5*, BM! MO! Cerro Punta, 25 IV 1969, *Lazor 2822*, F! El Boquete, 1000-1300 m, III 1911, *Pittier 2973*, AMES! US x3! Boquete, 5500 ft, 12 V 1971, *Proctor 31813*, F! LL! MO! Río Chiriquí Viejo, 1300-1900 m, 27 VI 1935, *Seibert 145*, AMES x2! K! MO! NY! WIS! Santa Clara, 1300 m, 26 II 1985, *van der Werff 7081*, AMO! MO! Río Chiriqui Viejo, between El Volcan and Cerro Punta, 15 III 1938, *White 1*, BM! MO! Ibid. 18 III 1940, *White 326*, AMES! MO!

OTHER RECORDS: HONDURAS*: color photo, AMO! **COSTA RICA:** Without locality, *Endres 174*, illustration of flower, W-R 38665! **San José:** San Isidro del General, ca. 1500 m, 8 III 1986, *Hágsater 8201*, slide, AMO! Santa María Dota, 1825 m, photographed 12 V

2004, *Pupulin 5206*, color photo, in F. Pupulin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1: 294, San José, C.R., Editorial de la Universidad de Costa Rica. **PANAMA: Darién:** Akerne Orchids, *AO-02362*, slide and spirit, AMO!

EPIDENDRUM POLYANTHUM Lindl. Plate 1162

OTHER SPECIMENS: MEXICO: Without locality, Ibid. 3 X 1892, *Colchester s.n.*, K! Ibid. 1 VI 1909, *Costantin s.n.*, P! Ibid. 1 I 1901, *Dowell s.n.*, AMES! Ibid. *Galeotti s.n.*, W! Ibid. *[Galeotti] 5125*, BR! Ibid. *Linden s.n.*, P! Ibid. *Pavón s.n.*, BM! Ibid. 26 II 1853, *Pavon s.n.*, W! Ibid. *Pavon 20-1*, BM! G! Ibid. *Purpus s.n.*, AMES! Ibid. *Schiede s.n.*, W! Ibid. *Schiede 29*, W! Ibid. Ibid. *Schlumberger 1334 (1415)*, NY! Ibid. *Sessé 4343*, F! **Jalisco:** Along a logging road from El Chante to El Guisar in the Sierra Manantlán, 2160 m, 17 VIII 1980, *Breedlove 45744*, CAS x2! Along road from El Chante to El Guisar, 1980 m, 21 IX 1984, *Breedlove 61763*, CAS! **Guerrero:** Sierra de Manantlán Occidental; Deep valleys and ridges 1 km W of Zarza Mora, 1 km SW of Las Joyas, 8 km SSE of Ahuacapan, ca. 20 km SSE of Autlán, ca. 1800-2000 m, 31 XII 1983, *Hugh 29023*, IBUG! Aprox. 3 Km al NO de Cruz de Ocote, 4 km aprox. sobre el camino a Yextla, 1860 m, 26 IX 1983, *Lorea 2509*, AMO! FCME! **San Luis Potosí:** Without locality, 16 V 1891, *Monssy 625*, AMES! **Puebla:** Villa Juárez, 7 IV 1944, *Miranda 3200*, MEXU! **Veracruz:** [Veracruz] ten Z.v.Tampico, O. Mexico, 0-100 m, 4 V 1921, Rutten 487, U! Ibid. 28 VIII 1898, *Leibold s.n.*, W! Ibid. 1 V 1919, *Purpus 6395*, UC! Raya Manuel Díaz (Sierra Manuel Díaz), 200 m, 27 IV 1985, *Acosta 519*, XAL! Barranca entre Chavaxtla y Baca del Monte, 750 m, 24 IV 1980, *Avendaño 778*, XAL! Izhuatlancillo, region d'Orizaba, 1 VI 1866, *Bourgeau s.n.*, P! Sierra de Chichimecas, 550 m, 23 VII 1981, *Castillo 2108*, XAL! En el filo de la sierra de Otontepec, al NE de Tepetzintla, 1200 m, 27 VIII 1981, *Castillo 2236*, XAL! Sasaltitla camino a Chicontepec, 350 m, 22 V 1987, *Duran 75*, XAL! Jalapa, *Galleotti 8*, W! Barrancas Tessolo, Zacuapan, 3000 m, 1 I 1840, *Galeotti 5125*, G! K! P! W! Santa Ana Morelos (La Caldera), 710 m, 19 V 1991, *García s.n.*, CORU! Mirador, 3000-3600 ft, *Hohenacker s.n.*, W! Río El Salto, en el rancho Chilpanapan, 650 m, 14 V 1990, *Huerta 24*, CORU! Finca en el rancho Chilpanapa, 650 m, 17 V 1990, *Huerta 26*, CORU! Estación de Biología Tropical Los Tuxtlas, Lote 67, Jardín Botánico, 200 m, 20 VII 1983, *Ibarra 747*, AMO! Ibid. 160 m, 2 VII 1984, *Ibarra 1835*, AMO! Southern Veracruz, 2500 ft, 29 V 1960, *Johnson 259*, AMES! South of Lake Catemaco, 600 ft, *Johnson 2954*, SEL! Miradores, *Linden 15*, W! Barranca de Metlac, 16 IV 1992, *López 115*, AMO! Nogales, 2 V 1937, *Matuda 1168*, AMES! MEXU! MICH! Barranca situada 1 km al S de Palmillas, 600 m, 23 V 1985, *Medina 139*, XAL! Near Zacuapan, 4 V 1938, *Nagel 2298*, AMES! MO x2! Near Jalapa, 1384 m, 1 I 1931, *Oestlund 2554*, AMES x2! MEXU! MO! S! US! Near Zacuapan, 900 m, 18 V 1937, *Oestlund 2991*, AMES! Region of Cordoba to Orizaba, 900-1300 m, 25 VI 1935, *Oestlund 3775*, AMES! BM! Cerro de la Cueva de Lourdes, 700 m, 25 IV 1990, *Oliva 698*, CORU! XAL! 600 m al E del puente del río Negro, La Patrona, 750 m, 15 V 1991, *Oliva 924*, CORU! Totutla, Zacuapan, 1 I 1905, *Purpus 6292*, CAS! RB! Zacuapan, 1 IX 1935, *Purpus 16268*, AMES! Estacion de Biologia Tropical Los Tuxtlas, 300 m, 1 II 1985, *Salazar 2225*, AMO x3! Tejeria, ca 6 km de Teocelo hacia Llano Grande, pasando Monte Blanco, 680 m, 27 XII 1986, *Salazar 2516*, AMO! (flowers in spirit) Barranca de Zacuapam, 900-1000 m, 17 V 1994, *Sánchez 287*, AMO x2! Ibid. *306*, AMO x2! Ibid. *659*, AMO! El Mirador, 1050 m, 10 III 1971, *Ventura 3582*, CAS! ENCB! Ibid. *3583*, ENCB! Ibid. 1000 m, 6 II 1973, *Ventura 7800*, ENCB! Ibid. 3 V 1976, *Ventura 12720*, AMO! ENCB! Ibid. 950 m, 25 VI 1977, *Ventura 14160*, AMO! ENCB! Mahuapan, 100 m, 15 III 1978, *Ventura 15084*, AMO! ENCB! MEXU! El Mirador, 950 m, 29 III 1982, *Ventura 19560*, AMO! **Oaxaca:** Without locality, 26 VI 1985, *Hágsater 6851*, AMO x2! (Illustration, flowers in spirit) Ibid. pressed cult. 3 VI 1994, AMO! Ibid. 20 VI 1994, AMO x4! Ibid. 29 VI 1995, AMO x6! Ibid. 25 VI 1997, AMO x10! De Cuyamecalev a Santa Ana, Distrito de Cuicatlán, 1500 m, 23 VI 1909, *Conzatti 237b*, F! Cordillera, ronches, 3000-4000 ft, 1 I 1840, *Galeotti 5125*, BR! P 2! W! Mixes, cultivada en Huayapam, *Hágsater 11799*, AMO x2! Rio Escondido (Arroyo Baul), a medio camino de Díaz Ordaz a Benito Juárez, ca. 37 km en linea recta al N de San Pedro Tapanatepec, 950 m, *Maya 1604*, MEXU! Arroyo de los Sastres, que baja de Chocomanantlán al Río Portamonedas (R. Negro), ca. 8 km en línea recta al NE de Benito Juárez, ca. 44 km en línea recta al NNE de San Pedro Tapanatepec, 850 m, 21 V 1986, *Maya 3364*, CHAPA! Distrito Mixe, 1900 m, 2 VII 1987, *Rivera 777*, AMO! Filo principal de la Sierra de Tres Picos, subiendo hacia el pico más alto del lado E (Cerro Pijicutzuc), 1220 m, 4 IV 1996, *Salazar 5574*, AMO! Filo del Cerro Guayabitos, en hondonada ligera subiendo hacia la cima, 1750 m, 24 X 1996, *Salazar 5760*, AMO x2! CHAPA! MEXU! Barranca San Antonio, 24 VII 1938, *Schultes 266*, AMES! US! Barranca of Nin-du-da-ge, San Antonio Eloxochitlán, 25 VII 1938, *Schultes 416*, AMES! UC! Barranca Nin-du-da-ge, San Antonio Eloxochitlán, 1100 m, 6 VII 1939, *Schultes 793*, AMES x2! San Miguel Chimalapa, Cerro Baúl, filo S ca. 150 m elev. abajo de la cima, ca 23 km en línea recta al N de San Pedro Tapanatepec, 1900 m, *Wendt 4943*, MEXU! **Chiapas:** without locality, 23 VII 1977, *Hartman s.n.*, AMO! Ibid. 14 VIII 1986, *Hágsater 5092*, AMO x6! Just east of Ocozocuautla, 3000 ft, 1 II 1978, *Bashor 2009*, AMO! In the barrio of Chihk Ha', paraje of Yashanal, 6000 ft, 17 III 1965, *Breedlove 9392*, CAS! F! MEXU! Along the main trail from paraje 'Oshewits to Tenejapa center near the paraje of Ch'ahkumah, 6200 ft, 12 VIII 1966, *Breedlove 14936*, CAS! ENCB! F! MICH! 10 km above Rayon Mezcalapa along road to Jitotol, 1700 m, 5 V 1973, *Breedlove 34861*, CAS! 16 km NW of Rizo de Oro a logging road to Colonia Figaroa, 1600 m, 14 IX 1983, *Breedlove 60229*, CAS! 10-15 km W of Ocozocoautla on road to El Ocote, 880 m, 25 X 1988, *Breedlove 70686*, CAS! E base of Cerro Tres Picos near Cerro Bola along a logging road SW of Colonia Agronomos, 1500 m, 9 II 1972, *Breelove 239778*, CAS! Tuxtla Gutiérrez, Cultivada en el Jardín Botánico "Faustino Miranda" Tuxtla Gutierrez, 530 m, 12 VI 1989, *Cabrera 113*, CAS! Cerro Tres Picos, 1800 m, 4 IV 1995, *Castillo 381*, AMO! Km 96, camino Chiapas de Corzo-Pichucalco, 1 XII 1970, *Hágsater 1368*, AMO x4! (Illustration) ENCB! km 105 de la carretera Tuxtla Gutiérrez-Villa Hermosa, aproximádamente 7 km arriba de Rayón, 1720 m, 11 IX 1985, Soto 1561, *Hágsater 8073*, AMO x2! (Illustration) Reserva El Triunfo, Polígono 1 near Campamento/HQ of reserve, 1850 m, *Heath 219*, CHIP! Reserva El Triunfo, Polígono 1 Cañada Honda-El Tomatal, 1400 m, 16 VI 1990, *Heath 1044*, CHIP! MEXU! Zinacantán below K'iuk chïen in Paraje Apas Lacantúm (Rio Jatatė) on the Guatemala border, 4500 ft, 31 III 1966, *Laughlin 523*, DH! Lacanjá-Chanzayab, camino Palenque Boca Lacantúm, 340 m, 7 XI 1985, *Martínez 15077*, MO! En Estación Chapul, 150 m, 12 XII 1992, *Martínez 25837*, AMO! MEXU! Mt. Ovando-Escuintla, 16 VII 1940, *Matuda s.n.*, AMES! Mt. Pasitar, 3 VIII 1937, *Matuda S-213*, AMES! MICH! Ibid. *S-220*, AMES! MICH! NY! K! US! Oxchuc, 4.4 km al noroeste de la cabecera municipal, 2090 m, 14 III 1995, *Mejía 97*, MEXU! Tenejapa Ococh, adelante de Cruzhen, camino Tenejapa-Yoshib, 2070 m, orilla del camino, 27 IV 1993, *Ochoa-Gaona 4047*, AMO! CAS! CICY! La Independencia E of Comitén, Lake Xaljueche, 1350 m, 17 III 1936, *Oestlund 5522*, AMES! 6 km al N de Finca Custepec, sobre el camino a Finca El Porvenir, 1120-1450 m, 13 VII 1990, *Reyes 1856*, MO! De La Laguna, *Schiede s.n.*, W! En el paraje "Kurus Chen", 2100 m, 8 IV 1982, *Shilom 4156*, AMO x2! MEXU! Volcán Tacaná, subiendo por Talquien, línea divisoria México-Guatemala, 2000-2500 m, 16 VII 1987, *Soto 3464*, AMO! Selva Negra, 7 km arriba de Rayón, ca. km 104.3 de la carretera MEX 195, Escopetazo (ca. Tuxtla Gutiérrez) -Villahermosa, 1800 m, 13 VII 1991, *Soto 6324*, AMO! Tuxtla Gutiérrez, Selva Negra, 7 km arriba de Rayón, ca. 104.3 de la carretera 195, Escopetazo-Villahermosa, 1800 m, 13

VII 1991, *Soto 6343*, AMO x3! (Illustration voucher, flowers in spirit) Cerca de Nuevo Momón, 25.8 mi al E de Las Margaritas, por el camino a Cruz del Rosario, ca. 1500-1600 m, 9 VIII 1992, *Soto 7179*, AMO x2! Las Margaritas ca. de Nuevo Monón, 41.28 km al E de las Margaritas, por el camino a Cruz del Rosario, 1500-1600 m, 9 VIII 1992, *Soto 7359*, AMO! Ibid. Soto 7372, AMO! Ibid. *Soto 7374*, AMO! Ibid. *Soto 7375*, AMO! Selva Negra, arriba de Rayón, Cerca de El Mirador, donde hay Pinus chiapensis, 1700-1810 m, 29 VI 1996, *Soto 8001*, AMO! Selva Negra, km 2.5 de la brecha a San Antonio, entre Rayón y Pueblo Nuevo Solistahuacán, (MEX 195), a 5.1 km de Rayón, 1800 m, 22 IV 2000, *Soto 9539A*, AMO! 6 km del Pueblo de Ocozocoautla al cerro Horizonte, 1250 m, 9 VI 1983, *Vázquez 877*, XAL! San Cristobal de Las Casas, 24 XI 1979, *Zimprich s.n.*, W! On a slope 3 km NW of Pueblo Nuevo Solistahuacán, 5800 ft, 5 IV 1971, *Zuill 852*, CAS! **BELIZE:** Southwestern Maya Mountains, Columbia River Forest Reserve, ca. 5 km E of Union Camp., 750 m, 9 IV 1992, *Holst 4235*, MO! **GUATEMALA:** Concepción, Las Lomas, 1 XII 1912, *Tejada 3*, US! Roderas de Quezaltenango, 2665 m, 1 I 1923, *Vaglet? 297*, AGUAT! **Alta Verapaz:** Chamá, 900 ft, 15 VI 1920, *Johnson 236*, AMES! US! Ibid. 5 VII 1920, *Johnson 255*, AMES! Chamá, 900 ft, 15 VI 1920, *Johnson 885*, AMES! Auf Bäumen in liersen Walden bei Cobán, 1300 m, 21 IV1882, *Lehmann 1364*, G x2! US! **Chimaltenango:** Los Idolos, 10 km from Godinez, 2000 m, 21 IX 1971, *Molina 26714*, F! MICH! U! **Chiquimula:** Volcán Ipala, near Amatillo, 900-1510 m, 29 X 1939, *Steyermark 30534*, AMES! **Guatemala:** Lotificación El Encinal, entrada por la San Juan, barranco al norte, 9 VIII 1983, *Sanchez 394*, AGUAT! **Huehuetenango:** Barillas, 1200 m, 25 IV 1948, *Holdrige 23368*, US! **:** Volcán de Pacaya, 5000-7000 ft, 24 VIII 1958, *Lewis* 203, AMES x2! Barillas, Between Barillas and Cerro Victoria, Sierra de Los Cuchumatanes, 1700-1800 m, 29 VII 1942, *Steyermark 49706*, AMES! Along Rio Amelco, Sierra de Los Cuchumatanes, below Finca San Rafael, 400 m, 27 VII 1942, *Steyermark 49678*, AMES! **Peten:** Hort. Belgium ex Tikal (Prove), *Rik Nierynck 39*, AMO x3! (flowers in spirit) Puerto Chimono, Laguna Petexbatún, 20 km South of Sayaxché, 110 m, 1 VIII 1990, *Zomer 351*, U! **Izabal:** Vicinity of Quirigua, 75-225 m, 19 V 1922, *Standley 24471*, AMES x2! US! **EL SALVADOR:** Santa Ana, Metapán, Along road to Cerro Monte Cristo at Los Planes at km 22, 1800 m, 31 VII 1977, *Croat 42335*, MO! San Salvador, Laguna Verde, 1600 m, 21 IV 1973, *Hamer 88*, AMES! MO! San Salvador, Boquerón, San Salvador Vulcano, 1800 m, 2 VIII 1968, *Hamer 89*, AMES! **HONDURAS: Yoro:** Concepción, *Edwards 495*, AMES x2! **Cortés:** Near the shore Lake Yojoa, 29 VII 1934, 2100 ft., *Yuncker 4835*, AMES! F! MICH! **Comayagua:** San Luis, 4400 ft, 19 IX 1931, *Edwards 72*, AMES! Las Jaguas, Minas de Oro, *Edwards 139*, AMES x2! Coyocutena, San Luis, 4000 ft, 21 V 1932, *Edwards 162*, AMES! Pito Solo, Lake Yojoa, 2000 ft, 6 VIII 1932, *Edwards 214*, AMES! Siguatepeque, 17 IV 1933, 3700 ft., *Edwards 398*, AMES! **Francisco Morazán:** Tegucigalpa, San Juancito, vicinity of Rosario mine, 26 VII 1932, *Edwards 8*, AMES! San Juancito, vicinity of Rosario Mine, 5300 ft, 26 VII 1931, *Edwards 14*, AMES! Tegucigalpa, San Juancito, vicinity of Rosario mine, 5000 ft, 7 VIII 1931, *Edwards 25*, AMES! Ibid. 9 VIII 1932, *Edwards 26*, AMES! Ibid. 9 VIII 1931, *Edwards 27*, AMES! Ibid. VIII 1931, *Edwards 28*, AMES!

EPIDENDRUM PURPURASCENS Focke

Plate 1168

OTHER SPECIMENS: COSTA RICA: Without locality, *Carnival 174*, W! Ibid. *Endres s.n.*, W! Ibid. *Endres 109*, W! Ibid., 1 VII 1978, *Rodríguez s.n.*, AMO! Ibid. 1 IV 1910, *Wortham s.n.*, MO! Guetamala, I 1841, *Friedrichsthal 1336*, W! Cordillera del Parque Bolivar, 28 IV 1935, *Valerio 1017*, CR! **Alajuela:** Tacacori, 900 m, 22 VI 1925, *Alfaro 92*, US! San Pedro de San Ramon, 1000-1600 m, 1 II 1921, *Brenes 26*, CR! Ibid., 1000 m, 27 IV 1923, *Brenes 547*, CR! San Ramón, Pacifico, Meseta Central, San Ramon-Palmares, 1000-1100 m, pressed cult. 15 VI 1984, *Hágsater 6421*, AMO! (Illustration voucher) Ibid. pressed cult. 3 VII 1984, AMO! Ibid. 26 VI 1986, AMO x2! San Roque de Grecia, 29 III 1993, *Herrera s.n.*, USJ! San Isidro, San Ramón, 24 IV 1998, *Rodríguez s.n.*, USJ! San Ramón Cuenca del Tárcoles, San Juan, Ruta a los Angeles, parche de bosque a orilla de la carretera, 1100 m, 25 V 1997, *Rodríguez 2215*, INB! MO! San Ramón, Forêts des collines de Tremendal près San Ramon, 1500-1600 m, 1 III 1913, *Tonduz 17621*, AMES! BM! K! P! US! **Puntarenas:** Reserva Biológica Monteverde, on "camino" to San Luis, 1250 m, 12 VI 1989, *Atwood 89-172*, AMO! F! San Luis Monte Verde, 1250 m, 25 VI 1987, *Haber 7254*, MO! Road from Santa Elena to village of San Luis and Lagarto, Pacific slope, moist forest, 750-950 m, 10 VII 1990, *Haber 9974*, INB! Monteverde 1 km S of community, Bajo Tigre Reserve, trail to Lindora ridge, between Río Guacilal and Quebrada Maquina, 1000-1200 m, 10 V 1990, *Haber 9877*, MO! **San José:** in Clauseen's garden, 5 V 1924, *Alfaro s.n.*, US! **COLOMBIA: Magdalena:** Sierra Nevada de Sta. Marta Araguaanca, Sta. Marta, 1 V 1845, Purdie s.n., K! **Vaupés:** Río Kuduyarí (tributary of Río Vaupés), Yapabodá, ca. 900-1000 ft, 4 IX 1956, *Barclay 529*, COL! Cerro de Yapobodá, headwater of Río Kuduyarí, ca. 600 ft, 15 VIII 1960, *Garay 112*, COL! Río Kuduyarí, ca. 350-400 m, 25 VI 1958, *García-Barriga 15828*, COL! Canon Cubiyu, Comunidad Indígena La Sabana, 200 m, 26 IV 1996, *Madrinan 1106*, COL! MO! Río Kuduyarí, Cerro Yapobodá, ca. 450 m, 5 X 1951, *Schultes 14206*, COL! Mitú and vicinity; Río Paraná-pichuna, 27 VI 1975, *Zarucchi 1335*, COL x2! Mitú and vicinity; along lower río Kubiyú, 9 VII 1975, *Zarucchi 1411*, COL x2! **VENEZUELA:** Without locality, 7 IX 1978, *Bergold 1*, AMO! Ibid. *Bergold 4*, AMO! [**Sucre**:] Cumana, *Henchman s.n.*, AMES! **Bolivar:** Near San Felix, 1 V 1956, *Dunsterville 361*, K! Piar Umgebung von Upata, gebluht in Caracas, 400 m, 1 VI 1959, *Renz 9493*, RENZ x2! **Amazonas:** Atures, detras de las instalaciones militares a unos 5.6 km al norte de Puerto Ayacucho, ca. 60-80 m, 21 IV 1982, *Guanchez 1778*, MO! **GUIANA:** Without locality and collector, W 34921! Ibid. *Schomburgk s.n.*, K! Ibid. *Thurn 3*, K! U. Tukutu-U. Essequibo Kamoa Mts., 2 km N of camp on Kamoa River, 520 m, 9 XI 1996, *Clarke 2973*, AMO! Barima-Waini Lower 3 km of Sebai River, tributary of Kaituma River, 0 m, 12 XII 1991, *Hoffman 583*, AMO! **SURINAM:** Without locality, *Kappler 582*, S! Line 13 between Line A and to just beyond Expedition Line, Plateau A, 400-500 m, 4 I 1955, *Cowan 39147*, NY! Area of Kabalebo Dam project, distr. Nickerie, at 16.5 km, 7 km E of ferry over Kabalebo R., 20 XI 1976, *Heyde 222*, U! On small granitic islands in river, near confluence of Oost River, 225 m, 12 IX 1963, *Irwin 55659*, U! Lely Mts. SW plateaus covered by ferrobauxite, 550-710 m, 25 IX 1975, *Lindeman 382*, U! Lely Mts. SW plateaus covered by ferrobauxite, 550-710 m, 1 X 1975, *Lindeman 627*, U! In Carapa-forest near Wakay, Corantine river, 17 XI 1954, *Lindeman 6654*, U! Schmidt Mountain, km 7, 3 X 1944, *Maguire 24882*, NY! Nature Reserve Sipaliwini, distr. Nickerie, 10 III 1972, *Tenuissen 1177*, U! Nature Park Brownsberg, distr. Brokopondo, ca. 400 m, 11 VII 1971, *Tenuissen 1284*, U! **FRENCH GUIANA:** Without locality, 1 I 1976, *Veyret 1466*, CAY! Nancibo, 24 X 1983, *Billiet 1847*, BR! Montsinery, Piste de Risquetout, 1 XII 1979, *Cremers 6893*, CAY! Ibid. *Cremers 6894*, CAY! Piste de Ruiquetout, 1 I 1982, *Cremers 6894 bis*, CAY! Inselberg au NW des Monts de la Trinité; est de la Mana, 300-400 m, 5 VIII 1981, *Cremers 7444*, CAY! Montagnes de La Trinité-Bassin de La Mana, 400 m, 10 XI 1991, *Cremers 12641*, AMO! CAY! Mont Grand Matoury-Ile de Cayenne, 2 XI 1995, *Cremers 14194*, AMO! Monts Bakra, foret basses et broussailles en lisiére de "savaneýroche" sur affleurement granitique á 2 km á l' Ouest du Pic Coudreau, 550 m, 6 X 1980, *Granville 4155*, CAY x2! Montagne de Kaw - Montagne de Kaw,Versant Sud, bassin de laýcrique Patawa, 200 m, 10 XI 1987, *Granville 10201*, AMO! CAY! Piste de Risquetout - Région de Cayenne, 30 m, 14 X 1988, *Granville 10343*, CAY! Mont Atachi Bacca - Région de l'Inini Nord du plateau sommital, 10 km, SE de Gobaya Soula, Camp No. 1, 650 m, 16 I 1989, *Granville 10701*, AMO! CAY!

Fleuve Approuague, Riviére Arataye, Saut Pararé, sur les pentes d'un inselberg situé á 5 km, 350-400 m, 22 X 1978, *Sastre 6223*, CAY! Région entre Saut Macaque et Carbet br-lé, rives du petit Guaqui, 10 SEP 1961, *Schnell 12O13*, P! Crique Gabaret affluent de l'Oyapock, 29 VII 1976, *Veyret 1391*, CAY! HB! P! **BRAZIL:** Amazonas, com local exato, *Lotus-Oriric s.n.*, HB! **Amapá:** Río Yary, Sto. Antonio da Cachoeira, 13 XII 1912, *Inethlage s.n.*, MG! Río Oiapoque, on slopes of Mt.Carupina, 100-300 m, 15 X 1960, *Pires 48856*, MG! US! **Pará:** Without locality, *Wullschlaegel 1113*, W x2! Tucuruí, Vila Sta. Rosa, Capoeira de terra firme, solo areno-argiloso, 1 IV 1981, *Bastos 416*, MG! Ibid. *Bastos 419*, MG! Vigía campina do Palha, 1 IV 1990, *Batista 60*, MG! Serra dos Carajas, Serra Norte, ca 25 km E of AMZA Exploration Camp, 16 X 1977, *Berg 574*, HB! K! MG! MO! NY! S! U! US! Aprrox. 18 km east of Tucurui and Rio Tocantins, by BR 263, 28 X 1981, *Daly 1000*, MG! SEL! Serra dos Carajás, 25-30 km NW of Serra Norte mining camp, 5 XII 1981, *Daly 1745*, SEL! Altamira, Río Xingu, Ilha atrás do lago do Muruci em frente ao morro, 22 X 1986, *Dias 429*, MG! Altamira,, Río Xingu, margem do río Xingu, acampamento básico do Juruá, 29 XI 1986, *Dias 680*, MG! Altamira, Río Bacajá, Localidade Pariachá, 11 XII 1986, *Dias 741*, MG! Parauapebas Serra dos Carajás N-3, 1 IV 1991, *F. da Silva 62*, MG! Marabá, Serra dos Carajás, N-4, mina piloto para exploracao de ferro, 700-750 m, 14 III 1984, *L. da Silva 1774*, CM! MG! Moju Fazenda Santo Antonio, 1 III 1964, *Pontes s.n.*, HB! Sandy beach, Ilha do Deserto, Río Xingú just below Río Bacajá, 20 XI 1980, *Prance P26360*, MG! Tucuruí, campinas de Santa Rosa, 4 X 1983, *Revilla 8511*, NY! Altamira, Río Xingu, margem esquerda do río Pardo confluencia com o río Xingu, 10 m, 11 X 1986, *Vasconcelos 229*, MG! Altamira, Río Xingu, margem direita do río Xingu, Ilha do Jotobá a 60 km do 1o. acampamento (Ilha do Belo Horizonte), 18 X 1986, *Vasconcelos 329*, MG! **Maranhao:** Río Turiacu, 1 XI 1979, *Jangoux 1213*, MG!

OTHER RECORDS: COSTA RICA: Without locality, comprada en Naranjo, *Rodríguez 405*, Illustration (Xerox copy, slide AMO!)

EPIDENDRUM REPENS Cogn. Plate 1169

OTHER SPECIMENS: MÉXICO: Veracruz: Xico, Puente Acalocabaya, entre Xico y Xico Viejo, 1500 m, 4 X 1986, *Cházaro 4023*, AMO! XAL! Coatepec, entre Coatepec Viejo y Cieneguilla, 30 VIII 1987, *Cházaro 4973*, IBUG! XAL! Xico, 3-4 km al O de Xico, por el camino a Buenavista, 1350 m, 25 XII 1987, *Cházaro 5240*, ENCB! IBUG! WIS! XAL! Xico, cinco Km al norte del pueblo de Xico, 1370 m, 4 X 1990, *Flores 130*, AMO! Coatepec, 26 IX 1976, Hágsater 3963, AMO! (Illustration) Volcan Santa Martha, 1200 m, 28 XI 1984, *Hágsater 6212*, AMES! AMO x4! F! SEL! Orizaba, San Cristobal, 30 IX 1965, *Hahn 3104*, P! Ca. 3 km NW of Xico (15 km S of Jalapa) on road to Xico viejo, 1700 m, 15 VII 1992, *Hietz 418*, XAL! Jalapa, *Schiede 3026*, G! Atzalan Alceseca, cerca del rio y el puente,1150 m, 22 XI 1969, *Ventura 83*, ENCB! **Oaxaca:** San Miguel Chimalapa, Filo del Cerro Guayabitos, cerca de la cima (Mirador) en un plano, 1770 m, *Salazar 5824*, AMO! San Miguel Chimalapa, Paraje palmero, El Gringo, cerca del parteaguas continental (en laÿvertiente S) al W del Cerro El Retén, ca. 23 km en línea recta al NNE de Zanatepec, 1620 m, 25 VIII 1986, *Wendt 5408*, MEXU! **Chiapas:** Pueblo Nuevo Solistahuacán on the eastern side of Pueblo Nuevo Solistahuacán, 1700 m, 11 XII 1971, *Breedlove s.n.*, DH! La Trinitaria, east of Laguna Tzikaw, Monte Bello National Park, 1300 m, 16 XI 1972, *Breedlove 29599*, DH! Motozintla de Mendoza, 45-50 km northeast of Huixtla along road to Motozintla, 1900 m, 28 XII 1972, *Breedlove 31030*, DH! La Trinitaria, east of Laguna Tzikaw, Monte Bello National Park, 1300 m, 13 V 1973, *Breedlove 35154*, DH! Near Camp. El Triunfo, 1900 m, *Castillo 863*, AMO! Cerro El Triunfo, 2100 m, *Castillo 1735*, AMO! Entre Palo Gordo y Campamento El Triunfo, 2200 m, *Castillo 1747*, AMO! Camino del campamento El Triunfo, hacia El Derrumbe, 2000 m, *Castillo 1471*, AMO! Jaltenango, Reserva El Triunfo, Poligono 1. Camp-Cerro El Triunfo, 2100 m, 21 XI 1990, *Heath 1328*, AMO x3! CAS! La Trinitaria, East of Comitan, around Lake Tziscao, ca. 1300 m, 11 II 1937, *Oestlund 6569*, AMES! Motozintla de Mendoza, km 48 de la carretera Huixtla-Motozintla, 2300 m, 16 IX 1985, *Soto 1928*, AMO x2! **GUATEMALA:** Found in moss purchased at the Christmas market in Guatemala City, 30 XII 1936, *Lewis 187*, AMES! **San Marcos:** Finca El Porvenir along Rio Chopal, south facing slopes of Volcan Tajumulco, 1300-1500 m, 11 III 1940, *Steyermark 37523*, AMES! **Baja Verapaz:** Chilasco, on Concepcion Road, *Contreras 10918*, S! US! Biotopo del Quetzal, 1630 m, 22 VII 1988, *Martínez 23080*, MO! **Chimaltenango:** Tactic, 4 IV 1941, *Johnston 1831*, AMES! **EL SALVADOR: San Salvador:** Cerro El Pilon, near Santa Ana, 1600 m, 20 II 1966, *Hamer 181*, AMES! **HONDURAS: Morazan:** La Tigra, southwest of San Juancito, 1800-2100 m, 2 II 1966, *Molina 17001*, F! US! W! Above San Juancito, San Juancito Mountains, 1800 m, 24 III 1951, *Williams 17549*, AMES! F! US! **NICARAGUA: Jinotega:** La Palestina, situada a unos 10 km E de la Ciudad de Jinotega, 1200-1300 m, 28 II 1979, *Grijalva 253*, MO! **COSTA RICA: Cartago:** Northeast of Cartago, ca. 6000 ft [1836 m], 18 III 1924, *Lankester s.n.*, AMES! Cerro de La Carpintera, 1500-1850 m, 1 II 1924, *Standley 34494*, AMES! US! **Heredia:** Barva NW of Porrosati, 2100 m, 17 XI 1990, *Ingram 716*, USJ! **San José:** Laguna de La Chonta, northeast of Santa Maria de Dota, 2000-2100 m, 18 XII 1925, *Standley 42350*, AMES! US! **CUBA:** Bartolomé Maso, Lomas de Joaquin y Regino, *Bisse, et al 40544,* HAJB! Oriente: Cueva del Aura, Sierra Maestra, *Acuña 9546*, HAC! Cresta de la Sierra Maestra, *Acuña 22973*, HAC! Sierra Maestra, Pico Turquino, *Ekman 5411*, S! Sierra Maestra, prope La Rayamensa, in Mont inter Rio Oro et Río Yao, 1100-1400 m, *Ekman 7097*, S! Margenes del Arroyo Peladero Arriba, en el Alto de la Valenzuela, Sierra Maestra, *López 2214*, HAC! Ibid. *2219*, HAC! Slopes of La Bayamesa, crest of the Sierra Maestra, near Aserradero San Antonio de los Cumbres, 1500-1800 m, *Morton 9299*, US! Crest of Sierra Maestra Between Pico Turquino and La Bayamesa, 1350 m, *Morton & Acuña 3685*, AMES! **JAMAICA:** Woodcutters Gap, 4000 ft, 6 XII 1898, *Harris 7561*, BM! F! UC! Lower eastern ridge of Mossman's Peak,1600-1700 m, *Maxón 9653*, AMES! Parish of Portland, Blue Mountains, Green Hills, 2 km Nordlich von New Castle (Kingston-Buff Bay), 1000 m, *Renz 9861*, RENZ! **HAITI:** Formond, *Dod s.n.*, Herb. DOD! Massif de La Hotte, Les Cayes, Les Platons, a pie 3 horas al campamento, más o menos 2 km antes del llano del Formón, *Dod 1832*, Herb. Dod x2! Ibid. *1847*, Herb. Dod! (Illustration voucher) Massif de La Pelle, Nouvelle Touraine, Chapelle Taure, in Raubwald, on the second pine hill on the path to Morne La Visite, ca. 1700 m, *Ekman 1668*, S! Depart d'Artibonite Montagnes Noires, Morne Basil, in Laubwald,1300-1450 m, *Ekman 2530*, AMES! S! Barassa, Mornes des Commissaries, 1500 m, *Holdrige 1833*, F! NY! Vicinity of Marmelade, ca. 800 m, *Leonard 8369*, AMES! UC! US! **DOMINICAN REPUBLIC:** 950 m, *Fuertes 1764*, P! Polo, Loma de Cielo, ca. 600-1300 m, *Abbott 1813*, AMES x3! Sierra de Neiba, along the Carretera International near the crest of the range, along the Haitian border, vic. line between provinces of San Rafael and Independencia, 1700-2000 m, *Gastony, Jones & Norris 563*, NY x2! Río Grande on the new road to Valle Nuevo,1400 m, 16 VII 1955, *Jiménez 3005*, US! Loma de la Sal, Jarabacoa,1250 m, *Liogier 11392*, AMES! Valley of Rio de la Laguna, Rancho del Medio, Mata Grande, S of San Jose de Las Matas,1100 m, *Liogier 12949*, AMES! Ciénega de Manabao, Parque Nacional, Loma Entre los Ríos, 12 IV 1968, *Marcano 5464*, US! Prope Comlariga, 1900 m, *Tuerckheim 3101*, AMES! **Barahona:** Monteada Nueva, *Dod s.n.*, Herb. Dod! Sierra de Barohuco; carretera a la Guazara, ca. 1500 m, *Dod 1111*, Herb. Dod! Suf des Hode des Noche Buena Berges, 2000 m, *Fuertes 887*, AMES! SEL! La Loma, 900 m, *Fuertes 1203*, AMES! Lo Ho bui Rincon,1800 m, *Fuertes*

1314, AMES! Monteada Nueva, forested hillslopes S. E. of Polo, *Howard & Howard 8572*, AMES! BM! FI! Monteada Nueva, Caña Brava, S of Cabral, Barahona Mts.,1300 m, *Liogier 11665*, NY! Idem. *14248*, AMES! P! **Loma Nalga de Maco:** Pueblo Loma de Cabrera, carretera a Restauración, un ramal por carrizal, hacia el sur cruzando el Río Artibonito y llegando al poblado Río Limpio, 1900 m, 1500 m, *Dod 1063*, Herb. Dod x3! **Santo Domingo:** Massif de Cahos, group Las Caobas, Belladere, Morne Lagoune Ibere, cast of Lagoune, ca. 1500 m, *Ekman 5631*, S! Prope Constanza,1400 m, *Türckheim 3001*, BM! E! G! L! S! W! **COLOMBIA: Antioquia:** Frontino Road to Ponton La Virgen, 1730 m, 13 V 1983, *Escobar 2594*, SEL! Carolina 1800 m, 25 IX 1884, *Lehmann 4147*, G! Frontino Andes of Antioquia, 1200-1850 m, 1 X 1891, *Lehmann 7607*, K! Frontino Above the airport below El Plateado, 1820 m, 3 V 1983, *Luer 8969*, SEL! **Magdalena**: Santa Marta Santa Marta, Sierra de Maca, 5000 ft, 22 VIII 1898, *Smith 2498*, AMES! CM! F! K! NY! **Nariño:** Ricaurte Reserva Natural La Planada; Corregimiento de chucunes, vertiente occidental, dentro del bosque, lado derecho del camino que va hacia Pialapi, 1800 m, *Paz 286*, CUVC! **Norte de Santander:** Toledo Vicinity of Toledo, 1700-1900 m, 3 III 1927, *Killip 20088*, AMES x2! NY! **VENEZUELA:** Without locality, *Fendler 1443*, MO x2! **Lara:** Zwischen Guarico und Laguneta, Umgebung der Passhohe, Las Tres Cruces, 1600 m, 12 IX 1953, *Renz 8004*, RENZ! Jiménez Zwrichen Sanare und El Volcán, Umgebung des Passhohe, 1600 m, 11 X 1959, *Renz 9702*, RENZ! Iribarren, en la Fila de Las Goteras, arriba de la cabecera del rio Claro, al sur del rio Claro, 1500-1550 m, 11 VIII 1970, *Steyermark 103722*, MO! P! **Yaracuy:** Sierra de Aroa, Cerro Negro 8 km SW of San Felipe, 1200-1800 m, 1 IV 1980, *Liesner 9822*, MO! **Distrito Federal:** Entre Galipán y la cumbre de El Avila, 1800 m, 17 XII 1938, *Williams 11020*, F! US! **Trujillo:** Gebiet Escuque-Mte.Carmelo, La Puya, 2000 m, 28 VIII 1947, *Renz 4318*, RENZ! **Portuguesa:** 15 km al Este de Chabasquén, 67 kms al NNO de guanare, 1450-1520 m, 29 XII 1982, Steyermark 126756, MO! **Merida:** Las Quebraditas, Weg Jaji-González tal, 2000 m, 12 IV 1949, *Renz 5175*, RENZ! Between La Trampa and Casadero, along tributary of Quebrada del Salado (between Lagunillas and Azulita), 2225-2590 m, 28 IV 1944, *Steyermark 56175*, AMES! Sucre, La Divisoria de la Concepción, 1700 m, 24 X 1985, Werff 7581, MO! **Táchira:** Las Delicias, 1800 m, 5 V 1951, *Renz 6890*, RENZ! **Bolivar:** Mount Roraima, between Rondón Camp and base of sadstone bluffs, 2040-2255 m, 30 IX 1944, *Steyermark 58968*, AMES! Ptari-tepui, on "Cave Rock" above "Cave Camp", 1810 m, 29 X 1944, *Steyermark 59522*, AMES! Piar Chimantá Massif, adjacent to quebrada, vicinity of camp 3, northwestern part of Abácapa-tepui, 1300 m, 20 IV 1953, *Steyermark 75214*, AMES! Cumbre de la parte norte de la seccion sur (división occidental del cerro), a lo largo del Rio Churun, entre campamento norte y campamento sur al pie de "Second Wall" de arenisca 1660 m, 14 V 1964, *Steyermark 93877*, AMES! NY! P! U! US! Mt. Roraima, Rondon camps belongs to Venezuela, 6900 ft 3 XII 1927, *Tate 483*, NY! **Amazonas:** Río Negro Cerro de La Niebla; Expedition Camp VII, 1850 m, 29 XI 1984, *Anderson 13418*, F! **ECUADOR: Carchí:** Maldonado, Valle de Maldonado, km 71 on road Tulcán-Maldonado, 2100-2200 m, 20 V 1973, Holm-Nielsen 6078, AAU! **Napo:** Papallacta Carretera Quito Baeza, unos 45 km al E de Quito, ca. 1700 m, 29 III 1994, *Carnevali 3463*, AMO! CICY! Cosanga, km 112 Quito-Tena 1850 m, *Dodson 14026*, MO! SEL! Baeza, km 99 or road from Quito to Baeza, 1840 m, *Dodson 16533*, MO! Desviación Baeza-Lago Agrio, 2 km antes de Baeza, al margen del río Papallacta, ca. 1900 m, 4 XII 1986, *Hágsater 8933*, AMO! Sardinas near Chaco, Baeza-Lago Agrio, 1 III 1983, *Hirtz 856*, SEL! Río Borja, km 3, 1770 m, 21 IX 1980, *Holm-Nielsen 26583*, AAU! Río Borja, km 4, 1780 m, 21 IX 1980, *Holm-Nielsen 26631*, AAU! Between Tena and Baeza, 2200 m, 23 II 1982, *Luer 7003*, SEL! **Imbabura:** Selva Alegre, west of Otavalo, 1760 m, *Kuhn 18*, SEL! **Pichincha:** Quito, Chiribiga, en la carretera vieja Quito-Santo Domingo, Reserva Forestal "La Favorita", al borde del Río Saloya, 1600-1800 m, 8 II 1990, *Cerón 8577*, QCNE! Km 68 Santo Domingo to Quito, 12 km above Tandapi, 2000 m, *Dodson 5306*, MO! Km 16 Nono-Tandayapa, bridge over Rio Alambi, 2210 m, 14 V 1981, *Dodson 10768*, QCA! RPSC! SEL! On path to right main Quito-Santo Domingo road, beyond locallity called Silante, 1800 m, 1 V 1967, *Nock 72*, E! Cayambe, Mojanda, III 1909, *Sodiro 45*, QPLS! Quito, Carretera Antigua Nono-Tandayapa-Los Bancos, 2300 m, 20 II 2000, *Suin 543*, QCNE! **Cotopaxi:** Machachi Crescit in silv. suband. in Corazón, 1 VII 1874, *Sodiro s.n.*, BR! **El Oro:** Guayquichuma, 1600 m, 9 II 1998, *Cornejo 6007*, QCNE! Saraguro Km 25 on road from Loja to San Lucas, 2200 m, 15 IX 1961, *Dodson 631*, F! QCA! SEL! Trail from El Corazón to Facundo Vela, 1-3 km S of El Corazón, 1300-1400 m, 17 V 1980, *Harling 19200*, GB!

OTHER RECORDS: COLOMBIA: Antioquia: Frontino, 1 XII 1974, *Valdivieso 645*, HPUJ (Illustration)! **ECUADOR: Cotopaxi:** Pujili Reserva Ecológica Los Ilinizas, Sector II (Sector Sur), sector Chuspitambo, al occidente de Choasillí, Cordillera Occidental, vertiente occidental, 1725 m, 8 VIII 2003, *Silverstone-Sopkin 9944*, photo digital AMO!

EPIDENDRUM STAMFORDIANUM Bateman Plate 1182

OTHER SPECIMENS: **MEXICO**: **Veracruz**: Tula, Los Tuxtlas, 1 XII 1977, *Hágsater 5522*, AMO! Los Tuxtlas, 3 IV 1982, *Hágsater 5522*, AMO x5! ENCB! MEXU! along the Hwy between Acayucan and Tierra Blanca at Sayula, E of San Juan Evangelista, 180 m, 26 II 1983, *Miller 707*, MEXU! MO! Region of Minatitlán, 100-200 m, 3-4 IV 1937, *Richards* sub *Oestlund 3763*, MO! US! Hidalgotitlán, camino a la Laguna, 14 III 1974, *Ponce 191*, MEXU! XAL! San Andrés Tuxtla, Estación de Biología Tropical Los Tuxtlas, Laguna Escondida, ca. 3 km NE de la Estación, ca. 200 m, 22 II 1985, *Salazar 540*, AMO! ENCB! MEXU! XAL! Hidalgotitlán, Campamento (SAHR), La Laguna, región de Uxpanapa, 100 m, *Salazar 5507*, MEXU! San Andrés Tuxtla, Laguna Escondida 2 km NW de la Estación de Biología Tropical Los Tuxtlas, 200 m, 28 II 1985, *Sinaca 2*, MEXU! Hidalgotitlán, alrededor del Campamento Hnos. Cedillo, 150 m, 24 II 1974, *Valdivia 15*, XAL! Hidalgotitlán, 7 km del Camp. Hnos. Cedillo SO localizado en las fotos de Estudios-Proyectos, vértice 17 y 18, foto (1-11)(7), a mano derecha, 150 m, 7 III 1974, *Valdivia 22*, XAL! Hidalgotitlán, km 7 del Campamento Hnos. Cedillo, 150 m, 8 III 1974, *Valdivia 48*, ILL! MEXU! XAL x2! Hidalgotitlán, al SO del Campamento Hnos. Cedillo, pasando el arroyo a 200 m, 152 m, 12 III 1974, *Valdivia 86*, MEXU! Hidalgotitlán, al E y a 1 km del campamento Hnos. Cedillo rumbo a la Laguna, 160 m, 11 IV 1974, *Valdivia 209*, MO! XAL x2! Hidalgotitlán, a 2.5 km del Campamento Hnos. Cedillo frente a paso Moral del lado norte, 150 m, 18 IV 1974, *Valdivia 335* XAL! Hidalgotitlán, a 2.5 km del Campamento Hnos. Cedillo frente a paso Moral del lado norte, 150 m, 19 IV 1974, *Valdivia 362*, XAL x2! Hidalgotitlán a 2.5 km del Campamento Hnos. Cedillo frente a paso Moral, 150 m, 20 IV 1974, *Valdivia 384*, XAL x2! Hidalgotitlán, a 6.5 km del Campamento Hermanos Cedillo rumbo a La Laguna, 159 m, 23 V 1974, *Valdivia 629*, MO! XAL x4! Hidalgotitlán, en el lindero Hnos. Cedillo rumbo a la Laguna, 160 m, 24 V 1974, *Valdivia 710*, XAL x2! Hidalgotitlán, a 440 m del Campamento Hnos. Cedillo rumbo a la Laguna, 160 m, 25 V 1974, *Valdivia 715*, XAL! Hidalgotitlán, a 5 km del Campamento Hnos. Cedillo dirección a Pancho Villa, 155 m, 19 VI 1974, *Valdivia 834*, XAL! Hidalgotitlán, a 1 km y medio del Campamento Hnos. Cedillo hacia la Escuadra, 156 m, 24 VI 1974, *Valdivia 965*, MEXU! XAL x2! Hidalgotitlán, a 1 km y medio del Campamento Hnos. Cedillo hacia la Escuadra, 150

m, 2 VIII 1974, *Valdivia 1253*, XAL Hidalgotitlán, a 1 km del Campamento Hnos. Cedillo, hacia la Escuadra, 14 IX 1974, *Valdivia 1465*, CICY! XAL x2! Fortuño, Coatzacoalcos River, 30-50 m, 1 III 1937, *Williams 8408*, F! **Oaxaca**: Juchitán, 6 km al NE de Lázaro Cárdenas, 200 m, 22 II 1982, *Cedillo 1112*, AMO x2! Chinantla, 4000 ft, *Galeotti 5056*, W! Santa María Chimalapa, Arroyo Sangre, ca. 2 km al E de Santa María, 250 m, 23 II 1985, *Hernández 901*, AMO! MO! Santa María Chimalapa, Río Negro, en vereda a Paso la Ciruela (Tuneayouju), 200 m, *Hernández 903*, MEXU! Santa María Chimalapa, Río Negro, en vereda a Paso La Ciruela (Tuniayjo), ca. 7 km al S de Santa María, 200 m, 26 II 1985, *Hernández 905*, AMO! MEXU! Talea, *Jurgensen 171*, W! Sierra de San Pedro Nolasco, Talea, 01 I 1843, *Jurgensen 971*, BM! K-L! Sierra de San Pedro Nolasco, Talea, 1 I 1843, *Jurgensen 971*, G! Tuxtepec, Chiltepec and vicinity, 20 m, 1 VII 1940, *Martinez-Calderon 562*, SEL! UC! Isthmus of Tehuantepec, East of Mogoñe, 100 m, 15 II 1935, *Oestlund 4572*, MO x2! Ibid., 19 II 1935, F! MEXU! MO! S! 1 km al S de Valle Nacional, sobre la carretera a Oaxaca, 100 m, 22 II 1976, *Rzedowski 33928*, ENCB! **Tabasco**: Teapa, 4 km antes de llegar a Teapa de la carretera Villahermosa-Teapa, 16 II 1982, *Magaña 7*, ENCB! Teapa, 4 km antes de llegar a Teapa de la carretera Villahermosa-Teapa, 16 II 1982, Magaña 698, AMO! CICY! XAL! Huimanguillo, en el poblado de Mecatepec a orilla del río Sabana de Huimanguillo, 22 II 1982, *Magaña 745*, AMO! ENCB! Balancán, Sobre la N-25 rumbo a la W-10 en la intersección con la W-1, 50 m, 3 XI 1976, *Menéndez 440*, BM x2! K-L! MEXU! UC! XAL! Teapa, 19 III 1990, *Ramón-Jiménez 243*, AMO! Balancán, Carretera No. 25, km 6, hacia la frontera con Guatemala de la carretera E.W.O., 37 m, 4 XII 1975, *Valdivia 2029*, XAL! Balancán, Carretera No. 25, a 4 km sobre E.W.O. a la carretera No. 20, 7 XII 1975, *Valdivia 2082*, XAL! **Chiapas**: Las Margaritas, on the western side of Laguna Miramar E of San Quintín, 350 m, 11 XII 1973, *Breedlove 33284*, CAS! Las Margaritas, Low ridges at the confluence of the rio Ixcan with the rio Lacantum (rio Jatate) on the Guatemala border, 300 m, 14 III 1973, *Breedlove 34056*, CAS! Huixtla, 6 km N of Huixtla on road to Motozintla, 200 m, 22 XI 1980, *Breelove 47677*, CAS! Tuxtla Chico, Rancho San Antonio, 350 m, 9 XI 1977, *Calzada 3769*, BM! ENCB! XAL! Ocosingo, En Campamento COFOLASA, a 24 km al SE de Crucero Corozal, Camino Boca Lacantum, 220 m, 25 II 1985, *Martínez 11250*, MO! Ocosingo, En Estación Chapul, 150 m, 14 III 1993, *Martínez 26315*, AMO! Esperanza, Escuintla, 20 XII 1937, *Matuda 2057*, MEXU! MICH! Ibid., 15 X 1947, *E. Matuda 17090*, F! MEXU! Finca El Real, 600 m, collected at Victoria, *Oberg B-36*, Dressler Herbarium! Hacienda La Victoria, 600 m, *Oberg B-37*, K-L! Ibid., 600 m, *Oberg 197*, HB! **Campeche**: Calakmul, Ejido Narciso Mendoza, zona urbana, 240 m, 6 II 1998, *Álvarez 638*, MO! Champotón, Zona arqueológica de Becan, 28 II 1981, *Andrews 5*, CICY! XAL x2! Champotón, Zona arqueológica del Hormiguero, 1 III 1981, *Andrews 12*, CICY! Campeche, SE of Campeche, near Xpujil, 300-400 m, 1 V 1973, *Cochrane 8386*, WIS! Ruinas de Chicana, camino Escarcega-Chetumal, cerca de Xpujil, 1 II 1972, *Jones s.n.*, AMO! Campeche, Tuxpeña, 30 I 1932, *Lundell 1269*, F! Tuxpeña, 14 II 1933, *Lundell 1333*, F! Las Pailas, 60 m, *Sarmiento 32*, AMO x3! Hopelchén, 3.4 km hacia Nuevo Bécal, partiendo de la carretera de Zoh-Laguna a Chunchintok, 12 III 1996, *Trejo 569*, AMO x2! CICY x2! **Yucatán**: Without locality, 2 III 1956, *Enríquez 452*, MEXU! Ibid. 1 I 1917, *Gaumer 23511*, F! Izamal, 1 I 1916, *Gaumer 23196*, F! Cankaboonot, Cenotes, 1 I 1917, *Gaumer 23511*, G! Izamal, 7 II 1888, *Gumer s.n.*, K-L! Izamal, 1 I 1888, *Gaumer s.n.*, F! **Quintana Roo**: Othón P. Blanco, 3-4 km al Oeste Nueva Jerusalén, unos 11 km al oeste de Graciano Sánchez (La Pantera), 4 II 1998, *Carnevali 4977*, AMO! Carrillo Puerto, Km 20 carretera F. Carrillo a Vigía Chico, 20 m, 20 VIII 1983, *Chan 2793*, CICY! XAL! Solidaridad Minas de Chunya axche o Muyil, 17 II 1990, *Escalante 1010*, CICY! Othón P. Blanco, a 1 km de la Galera del Rancho de Rodolfo Hurtado, aprox. a 7 km de la Unidad Agrícola "Lázaro Cárdenas", 50 m, 23 I 1999, *Ibarra 60*, AMO x2! Ibid., *Ibarra sub E. Hágsater 12139*, AMO x2! Zona Arqueológica de Coba, 15 m, 12 II 1981, *Ordóñez 136*, CICY! XAL! Othón P. Blanco, orillas de la carretera en las cercanías de una cuenca alrededor de un gran cenote 5 km al N de La Unión, ca. 0-50 m, *Sánchez 566*, AMO! Othón P. Blanco, Ejido Caobas, Sabana del Jaguactal, un desvío de 9.5 km por carretera de terracería al oeste de la carretera hacia tres Garantías, unos 21 km al sur de la carretera principal Xpujil-Chetumal, *Sánchez 593*, AMO! **GUATEMALA**: Without locality: W [55277]! W [17308]! *A. Richard s.n.*, W! Ibid. *Skinner* s.n., K-L! Ibid. Wallace s.n., K-L! Ibid. *Warscewicz s.n.*, W! **Petén**: La Libertad and Vicinity, 28 I 1935, *Aguilar 462*, MICH! Tikal National Park, 29 I 1959, *Lundell 15566*, LL! Dos Aguadas, Tikal National Park, 16 II 1959, *Lundell 15600*, LL! Tikal National Park, 04 III 1961, *Lundell 16881*, LL! Bordering Río Pasión, 01 II 1964, *Lundell 18084*, ENCB! LL! Tikal, Parque Nacional, orilla del camino a El Remate, 6 km de Santa Elena, 13 II 1970, *Tun Ortiz 704*, BM! F! MO! Santa Elena, entre la carretera Turicentro y San Francisco, km 16, ca. 25 m lado este de la carretera, 9 II 1972, *Tun Ortiz 2249*, F! **Alta Verapaz**: South of Cubilquitz, 3 V 1943, *Steyermark 44569*, F x2! Chicuxub Cubilguitz [Finca Cubilhuitz], 350 m, 01 IV 1904, *Turckheim 28*, BR! Chicuxub Cubilguitz [Finca Cubilhuitz], 350 m, 1 V 1904, *Turckheim (II) 38*, E x2! PR! Chicuxub Cubilquitz, 350 m, 01 V 1900, *Tuerckheim 7674*, US x2! **Quetzaltenango**: El Palmar, 12 XII 1946, *del Castillo s.n.*, USCG! **Suchitepéquez**: Mazatenango, 01 XII 1869, *Bernoulli 191*, W! **BELIZE**: **Orange Walk**: *Moloney 12*, K-L! **Belize**: Maskall, Pine Ridge, 26 I 1934, *Gentle 1124*, MICH! MO! WIS! **El Cayo**: Without locality, 13 III 1931, *Bartlett 11961*, MICH! Ibid., 05 III 1931, *Bartlett 11995*, MICH! S! Ibid. 9 II 1958 *Lemus s.n.*, BM! Sibun River, 06 II 1935, *Gentle 1499*, MICH! Vaca, 25 II 1938, *Gentle 2266*, K-L! MICH! US! Ibid., 01 III 1938, *Gentle 2546*, MICH! Ibid., 07 MAY 1938, *Gentle 2578*, MICH! **Stann Creek**: Without locality, *Gentle 183*, F! Valley, Blue mountain Valley, 26 II 1940, *Gentle 3238*, MICH! **EL SALVADOR**: Ahuachapan, alrededores de la Finca Santa Lina; ± 6 km al S de la Ciudad de Ahuachapán, 1 I 1961, *J. L. Linares & Carlos A. Martínez 1961*, MO! San Salvador, vicinity of Tonacatepeque, 30 XII 1921, *Standley 19428*, US! Cuscatlán, 3 kms antes de llegar a Tenancingo, 575 m, 8 XII 1975, *Hamer 120*, MO! **HONDURAS**: **Cortés**: Lake Yojoa, 2800 ft, 18 III 1933, *Edwards 382*, MO! San Pedro Sula, 300 m, 1 V 1888, *Thieme 5529*, US! **Yoro**: Yoro, 2800 ft, 16 I 1934, *Edwards 638*, K-L! NY! US! **Olancho**: Gualaco, Between Gualaco and San Esteban, near La Venta, 8 II 1982, *Blackmore 1756*, BM! MO! **El Paraíso**: Danlí Road along Rio San Cristobal, near Danli, 24 II 1952, *Carlson 2610*, MICH x2! El Paraíso ,Valle de Jamastran Brenales a lo largo del río Guayambre, 350 m, 13 III 1956, *Molina 7343*, F! Danlí Vicinity of Danlí, 700-800 m, 11 II 1949, *Standley 16453*, F! **NICARAGUA**: **Jinotega**: Quebrada La Esperanza, al SE de Wiwili, 500 m, 14 III 1980, *Araquistain 1976*, MO! **Matagalpa**: Along Hwy 5 ca. 25.5 km from hwy 3 intersection, ca. 7.7 km Matagalpa, Yasica river 26 km, south of Matagalpa, road to El Tuma, 400 m, 10 III 1967, *Molina 20485*, US! Yasica river 26 km S of Matagalpa, road to El Tuma, 400 m, 10 III 1967, *Molina 20485*, F! **Boaco**: Route 9, 1 km west of Boaco, 30 XII 1968, *Hamblett 1414*, MO! Boaco San Lorenzo, 2 km al E, Sierra el Espino, 500-600 m, 11 XII 1982, *Moreno 18553*, AMO! MO! **Masaya**: Parque Nacional Volcán Masaya, about halfway between Volcán Masaya and Laguna de Masaya in and somewhat below agricultural clearing, ca. 225-250 m, 8 II 1978, *Stevens 6274*, MO! **Chontales**: ca. 6.3 km SE of bridge over Quebrada Niscala along road between Acoyapa and Río Oyate, NE side of Cerros animas, ca. 55 m, 31 I 1981, *Stevens 19111*, MO! **Granada**: Isla Zapatera, costado E de Hacienda El Cerro, 400-500 m, 4 XI 1982, *Grijalva 1978*, MO! Volcán Mombacho, Finca Cutre, 300-400 m, 06 XI 1981, *Guzmán 2176*, MO! **Madriz**: Sierra de Colon near Someto, 900 m, 05 XI 1946, *Williams 10804*, F! **COSTA RICA**: **Guanacaste**: Bagaces, R. B. Lomas Barbudal, Valle del Tempisque, Lomas Barbudal, en Sendero Bagaces, 100-200 m, 18 XI 1993, *Chavarría 876*, AMO! Vicinity of Cañas, Finca Taboga, 13 XII 1969, *Daubenmire 435*, F! Guanacaste, Vicinity of Cañas, Finca Taboga, 21 XII 1969, *Daubenmire 463*, F! Slopes of Miravalles, above Bijagua,

ca. 1500 m, 01 XII 1982, *Gómez 19103*, BM! MO! 5 km from Playas del Coco, on the right hand side of the road heading for the ocean, 100 m, 1 XII 1970, *Hunter 112*, CR! Santa Rosa National Park, above Río Guapote, 06 III 1977, *Janzen 10533*, MO! **Puntarenas**: Osa Hills near Palmar Norte, 1000-1500 ft, 10 XII 1951, *Allen 6336*, F! Costa Rica Miramar de Puntarenas, 01 II 1983, *Mora s.n.*, USJ! Buenos Aires, R. I. Boruca-Térraba, Cuenca Térraba-Sierpe, 4-3 km, antes de Paso Real, entre Quebrada Chanchos y Quebrada, 130 m, 19 XII 1998, *Morales 6917*, INB! Nicoya, Forest de Nicoya, 1 I 1900, *Tonduz 13737*, BM! K-L! P! US x2! **San José:** Without locality, *Ric Pfau 77*, W! Ibid. 1 I 1923, *Lankester 1949*, BM! Ibid. 5 IV 1910, *Worthen s.n.*, MO! Cult. San José, 22 XII 1934, *Solís 483*, F! **Cartago**: Las Cóncavas, In Lankester's garden, 1400 m, 27 II 1924, *Standley 36000*, US! **PANAMA**: **Chiriquí**: km west of Panamá City, roadside along Panamerican Higway, between Santiago and San Felipe, 0-100 m, 13 XII 1977, *Folsom 6914*, MO! San Félix Vicinity of San Félix, eastern Chiriquí, 0-120 m, 01 XII 1911, *Pittier 5277*, US! San Félix Vicinity of San Félix, eastern Chiriquí, 0-120 m, 1 I 1912, *Pittier 5429*, US! Along Rio Dupi, eastern Chiriqui, 0 m, 19 XII 1911, *Pittier 5450*, US! **Colón**: Near Salamanca Hidrographic Station on the gorge of the R. Pequeni, 70-80 m, 15-30 XII 1934, *Dodge 16980*, BM! BR! G! K-L! MICH! MO! P! U! UC! S! Gamboa Around Gamboa, Canal Zone, 20-100 m, 1 I 1912, *Pittier 5471*, US! **Panamá**: Río La Maestra, 0-25 m, 4 XII 1936, *Allen 66*, US! MO! Barro Colorado Island, Canal Zone, 9 I 1969, *Croat 7015*, MO! Altos de Pacora Lower Pacara River [Pacora?], 24 XII 1917, *Killip 3292*, US! Around Culebra, Canal Zone 50-150 m, 01 XI 1911, *Pittier 4823*, US! Balboa, Canal Zone, *Powell 3*, K-L! Ibid., 0 m, 29 XII 1918, Powell 33, BM! K-L! MO! Río Pariso, above East Paraiso, Canal Zone, 7 I 1924, *Standley 29857*, MO! US! Juan Díaz, Río Tapia, 7 XII 1924, *Standley 39672*, US! **COLOMBIA**: **Magdalena**: Santa Martha, sin colector, K-L! La Guajira: Riohacha, Río de Hacha moist rocky woods chalvin, 1 XII 1866, *Purdie s.n.*, K-L! Ibid., 30 XII, K-L! **La Guajira**: Riohacha, Rio de Hacha moist rocky woods chalvin, 1 XII 1866, *Purdie s.n.*, K-L! Ibid., 30 XII, K-L! **Antioquia**: Without locality, 500 m, 22 X 1884, *Lehmann 148*, G! Ibid., 01 I 1884, *Lehmann 4000*, G!Ibid. 500-1000 m, 21 X 1884, *Lehmann 4000*, G! bei Antioquia, 1000-1500 m, 21 X 1884, *Lehmann 5000*, BM! Bei Antioquia, 500-1000 m, *Lehmann s.n.*, K-L! **VENEZUELA**: Without locality, *Arnold s.n.*, W! Ibid. *Lansberg s.n.*, W! **Amazonas**: 12.5 km S of Puerto Ayacucho 160 m small hill with one surface bare rock between road and the Río Orinoco, 1 XII 1971,*Davidse 2781*, MO! **Bolivar**: Cedeño Municipio foráneo La Urbana, 60 m, 23 I 1989, *Cuello 529*, MO! Cedeño Cerro El Medano, 22.5 kms SW of Calcara, 100-200 m, 2 XI 1985, *Holts 2509*, MO! **Carabobo**: Between Valencia and Yuma, 500 m, 24 XII 1936, *A. H. G. 3640*, NY! Between Valencia and Yuma, 500 m, 24 XII 1938, *Alston 5640*, BM! NY! Bajuma, 01 II 1957, *Dunsterville 397*, K-L! Vicinity of Valencia, 400-800 m, 17 I 1920, *Pittier 8751*, US! **Distrito Federal Caracas**: El Viejo, 2000 m, *Wagener 106*, W! **Lara**: Vicinity of Barquisineta, 01 I 1923, *Saer 29*, US! **Zuliá**: El Concejo, zwischen Palmarejo und Quiroz, 1 I 1948, *Renz 4662*, RENZ!

OTHER RECORDS: **MEXICO: Chiapas:** Without locality, *Soto 10772*, illustration AMO! **EL SALVADOR**: 3 km, antes de llegar a Tenancingo, 575 m, *Hamer 120* (Orquídeas del Salvador). **NICARAGUA:** Muymuy, 400 m, *Weinhold s.n.* (SEL) (Icon. Pl. Trop.); Costa Rica: Puntarenas, Aguirre, near Naranjito, 50 m, 2 I 1999, *Pupulin 1049* (Foto: Vanishing Beauty).

EPIDENDRUM TRACHYTHECE Schltr. Plate 1188

OTHER SPECIMENS: MÉXICO: Oaxaca: Filo del Cerro Guayabitos, un poco al E de la cima subiendo por la ladera quemada (SE) que da a la parte alta de la Cañada de la Hierba Santa, 1800 m, *Salazar 5828*, AMO! **Chiapas:** Motozintla de Mendoza, 45-50 km NE of Huixtla along road to Motozintla, 1900 m, 28 XII 1972, *Breedlove 31040*, CAS! Al NO de la Reserva del Triunfo, en la cima del Cerro Tres Picos, 2250 m, 12 V 1982, *Calzada 8857*, XAL! Claro El Triunfo, 1950, *Castillo 830*, AMO! Cerro El Triunfo, 2100, *Castillo 1597*, AMO! Entre Palo Gordo y Campamento El Triunfo, 2200, *Castillo 1743*, AMO! Reserva El Triunfo, Polígono 1, 2100 m, 21 XI 1990, *Heath 1343*, AMO x4! flowers in spirit AMO! CORU! Cerro de Tres Picos, al N de Tonala, 2300 m, 10 VI 1986, *Soto 2761*, AMO x2! (Illustration) Cerro de Tres Picos, al N de Tonala, 2250 m, 10 VI 1986, *Soto 2815*, AMO! **GUATEMALA:** Crater Pacaya, 8300 ft [ca. 2539 m], 6 I 1907, *Kellerman s.n.*, F x2! US x2! Pacaya, 30 XI 1938, *Standley 1399*, AMES! Zacapa, Between Loma El Picacho and Cerro de Monos, 2000-2600 m, 16 I 1942, *Steyermark 42827*, AMES! **Guatemala:** Volcan de Pacaya, above Las Calderas, 1800-2400 m, 30 XI 1938, *Standley 58465*, AMES! Slopes of Volcan de Pacaya, between san Francisco Sales and the base of the active cone, 1800-2300 m, 20 XII 1940, *Standley 80770*, AMES! **EL SALVADOR**: **San Salvador:** Cerro El Pilón, 1960 m, 15 IX 1969, Hamer 246, AMES! (Illustration, publ.). **HONDURAS:** El Paraíso, Montaña de Yuscarán, 1800 m, 31 XII 1943, *Rodriguez 1926*, F! **Francisco Morazán [Yoro]:** Monte Uyaca, 6000 ft [ca. 1836 m], 5 XII 1946, *Allen 3866*, AMES! G! SEL! Ibid. 1900 m, 6 XII 1949, *Leon 2438*, CR! Ibid. 1800 m, 18 XI 1948, Molina, 1631, SEL! Ibid. VIII 1960, *Pfeifer 1816*, US! Ibid. 1600-1800 m, 9 V 1947, *Standley 8029*, F! 1300-1600 m, 23 X 1951, *Swallen 11053*, F! US! La Montañita, 1400-1750 m, 18 XI 1940, *Standley 14743*, AMES! **Ocotepeque:** Cordillera Merendon, vicinity El Portillo, 2000 m, 2 IX 1975, *Molina 31011*, ENCB! F! MO! **NICARAGUA:** Without locality, *Heller 9867*, SEL! Ibid. *Heller 3013*, SEL! **Matagalpa:** N of Matagalpa, Santa Maria de Ostuma, 29 XII 1973, *Atwood 6931*, SEL! (Illustration). **COSTA RICA:** Without locality, *Endres s.n.*, W! Ibid. *Mora de Retana 7*, USJ! Ibid. *Standley 34413*, F! La Palma, 1250 m, 4 XI 1922, *Brenes 148*, AMES! Navarrito, 6 XII 1923, *Lankester 557*, AMES! Panamerican highway from Estrella valley above to road near La Cangreja, 31 I 1960, *Lankester 1756*, SEL! Forest du Rancho Flores, 2043 m, 22 II 1890, *Pittier 2165*, AMES x2! US! Vara Blanca de Sarapiqui, north slope of Central Cordillera, between Poas and Barba Volcanoes, 1850 m, 1 II 1938, *Skutch 3512*, AMES! Cascajal Coronado, 1800 m, 27 XI 1938, *Valerio 2678*, AMES! **Alajuela:** Poas-Varablanca, km 3, 9 XI 1982, *Hágsater 6799*, AMO! La Peña de Zarcero, 1775 m, 4 IV 1938, *Smith 583*, AMES! Palmira, 6000 ft [ca. 1836 m], 13 I 1938, *Smith 105*, AMES! F! Ibid. 6200 ft [ca. 1890 m], 9 II 1938, Smith 302, AMES! F! Ibid. 9 V 1938, *Smith 529*, SEL! Viento Fresco, 1600-1900 m, 13 II 1926, *Standley 47803*, AMES! **Cartago:** Interamerican Highway S. of Cartago, km 39, 1850 m, 27 X 1992, *Atwood 4167*, USJ! Tablazo, 28 IV 1946, *Echeverria 378*, F! Tablazo, 1900 m, 30 XI 1960, *Horich s.n.*, MO! (Illustration voucher) Las Concavas, 10 I 1952, *Lankester 1612*, SEL! Au dessus de San Isidro, 1800 m, 29 XII 1881, *Lehmann 1066*, G! Camino a Palmital, carretera Interamericana Sur, 1865 m, 25 V 1993, *Rojas 10*, USJ! Alto de La Estrella, 26 III 1924, *Standley 39563*, AMES! US! Ibid. *Standley 39571*, AMES! US! Ibid. *Standley 39580*, AMES! US! *Standley 39583*, AMES! Ibid. *Standley 39585*, AMES! US! Ibid. *Standley 39588*, AMES! US! Cerro de La Carpintera, 1500-1850 m, II 1924, *Standley 34413*, AMES! US! Ibid. *Standley 34470*, AMES! US! Ibid. *Standley 35683*, AMES! US! Highest Carpintera, 6000 ft [ca. 1836 m], 3 IV 1928, *Stork s.n.*, AMES! Tablazo, 1500 m, 17 III 1978, *Todzia 202*, CR! Vicinity of La Cangreja about 10 km south of El Tejar, Cordillera de Talamanca, 1750-1850 m, II 1963, *Williams 24123*, AMES! F! MO! Near La Sierra about 25 km south of Cartago, Cordillera de Talamanca, 2000 m, 23 I 1965, *Williams 28164*, CR! F! **Heredia:** Without locality, 2500-2700 m, *Boyle 512*, USJ! *Dressler s.n.*, USJ! Parque Nac. Braulio Carrillo. Park Refugio, 0.5-1 km NE of Refugio, 2100 m, 4 XI 1990, *Ingram 664*, INB! Varablanca, Poas-Varablanca, Km 3, 16 XI 1984, *Hágsater 6776*, AMO x2! Varablanca, XI 1958,

Lankester 1724, SEL! Vara Blanca, 2000 m, 17 XI 1992, *Morales 594,* USJ! Ibid. *Morales, 595,* USJ x2! Yerba Buena, northeast of San Isidro, ca. 2000 m, 22 II 1926, *Standley 50133,* AMES! Ibid. *Standley 50194,* AMES! US! Ibid. *Standley 50205,* AMES! Cerros de Zurqui northeast of San Isidro, 2000-2400 m, 3 III 1926, *Standley 50657,* AMES! Ibid. *Standley 50763,* AMES! Ibid. *Standley 50774,* AMES! Ibid. *Standley 50805,* US! Ibid. *Standley 50308,* AMES! Ibid. *Standley 50864,* AMES! US! Cerro de Las Lajas north of San Isidro, 2000-2400 m, 7 III 1926, *Standley 51489,* AMES! US! Ibid. *Standley 51500,* AMES! Ibid. *Standley 51521,* AMES! US! Ibid. *Standley 51640,* AMES! Cerro de Las Caricias north of San Isidro, 2000-2400 m, 11 III 1926, *Standley 52330,* AMES! US! Ibid. *Standley 52357,* AMES! US! Ibid. *Standley 52384,* AMES! US! Ibid. *Standley 52398,* AMES! Along the slopes of Cerro Zurqui above the Rio Para Blanco, 1600 m, 22 XII 1974, *Taylor 17464,* NY! US! Los Cartagos, 1900-2000 m, 27 X 1979, *Todzia 906,* CR! Rio Sarapiqui below San Miguel, 800 m, 12 IV 1949, *Williams 16333,* SEL! **Puntarenas:** Reserva Monteverde, Sendero Nuboso, 1 XII 1984, *Dressler 221,* USJ! **San Jose:** Carpintera, *Curt s.n.* AMES! Fila de La Cordillera de Talamanca, 1 km al Sur de Casa Mata, 19 XII 1981, *Hágsater 6327,* AMO! (Illustration, flowers in spirit) ENCB! MEXU! Parque Nac. Braulio Carrillo, Cantón de Vazquéz de Coronado; Zurquí Station; about 0.5 Km SE of Estación de Peaje, at park border, 1650 m, 26 X 1990, *Ingram 635,* AMO! Between Aserri and Tarbaca, 1600-1900 m, 12 II 1924, *Standley 34127,* AMES! F! US! Las Nubes, ca. 1500-1900 m, 20 III 1924, *Standley 38788,* AMES! US! Ibid. *Standley, 38798,* AMES! US! Zurqui, 2000-2500 m, 13 II 1926, *Standley 48185,* AMES! Ibid. *Standley 48201,* AMES! San Cristobal Road, 8000 ft [ca. 2448 m], 27 V 1928, *Stork 2712,* AMES! La Chonta, 2400 m, 5 II 1979, *Todzia 561,* CR! **PANAMA: Chiriqui:** Cerro Hornito (Cerro Pata de Macho) Southern rim of the Edwin Fabrega Dam and Reserve watershed, ridge trail leading to the summit, 1800-1950 m, 17 I 1989, *Almeda 6266,* CAS! Bajo Chorro, 6000 ft [ca. 1836 m], 14 I 1938, *Davidson 124,* AMES! F! MO! US! Above Boquete, 1700 m, 17 XII 1976, *Luer 1354,* SEL! Lower montane wet forest 5.5km by road NW of Alto Quiel along road toward Cerro Punta; 8 km NW Boquete, 1600 m, 23 II 1974, *Nee 9936,* MO!

EPIDENDRUM TURIALVAE Rchb.f. Plate 1193

OTHER SPECIMENS: Without data, *197,* W-R ?502! Ibid. *Endres 184,* W-R 13649! W-R 36505! **NICARAGUA: Boaco:** Cerro Mombachito, NO de Camoapa, 1059 m, 24 I 1980, *Araquistain 933,* MO! Ibid. ca. 900 m, 8 II 1983, *Grijalva 2281,* MO! SW slope of Cerro Mombachito, 900-1000 m, 3 X 1979, *Stevens 14620,* MO! **Granada:** Volcán Mombacho, 20 II 1903, *Barker 2474,* AMES x2! S! Ibid. S de Granada, 700-1000 m, 11 VI 1984, *Grijalva 3867,* MO! Ibid. above Finca las Delicias, 900 m, 8 VIII 1976, *Neill 671,* MO! **Rivas:** Volcán Maderas, 900-1200 m, 5 VI 1985, *Robleto 2115,* MO! **COSTA RICA:** Without data, X 1876, W 9337! Hort. SEL, 23 XII 1974, *Northen s.n.,* SEL 601! **Alajuela:** 4 km from Guatuso on trail to Margarita Village, 80-100 m, 4 VIII 1949, *Holm 883,* AMES! G! USJ! Río Zapote, Upala, 600 m, 3 VI 1978, *Gómez 3770,* USJ! 2.5 km NE of Arenal Volcano, 450 m, 29 VI 1972, *Lent 2650,* AMES! F! Arenal, 650 m, 11 XII 1923, *Valerio 24,* US! **Cartago:** Instituto Interamericano de Turrialba, 27 VI 1947, *DeWolf 209,* AMES! Ibid. 14 VII 1947, *DeWolf 302,* AMES! River Banto above La Suiza, 15 VII 1947, *DeWolf 304,* AMES! Cañon de Río Birris, ca. de Santiago de Paraíso, 1000-1100 m, pressed cult. 28 VI 1981, *Hágsater 6419,* AMO x2! (spirit and Illustration at AMO! xerox copy of illustration, ENCB!) QCNE! Ibid. 20 XI 1982, *Hágsater 6419,* AMO! CR! Ibid. 2 VIII 1984, *Hágsater 6419,* AMO x2! USJ! Ibid. 19 IX 1984, *Hágsater 6419,* AMO! Ibid. 27 X 1988, *Hágsater 6419,* AMO x2! Pacayitas de Turrialba, 1000 m, pressed cult. 28 X 1982, *Hágsater 6778,* AMO! Ibid. 22 XII 1984, *Hágsater 6778,* AMO! cerca de Grano de Oro, 800 m, pressed cult. 15 V 1983, *Hágsater 7118,* AMO! (Illustration voucher, AMO!) xerox copy of illustration, ENCB! MEXU!) Ibid. 2 VII 1983, *Hágsater 7118,* AMO! Ibid. 11 VI 1984, *Hágsater 7118,* AMO! Ibid. 27 X 1988, *Hágsater 7118,* AMO x2! Ibid. 4 VII 1993, *Hágsater 7118,* AMO! Valley of Río Reventazón, SE of Turrialba, 500-600 m, 23 VI 1949, *Holm 97,* MO! USJ! Entre el Inst. de Turrialba y el Río Reventazón, 600 m, 12 VI 1965, *Jiménez 3287,* F! Peralta, 1000 ft, 14 VII 1923, *Lankester 480,* AMES! Río Chitaría, 780 m, 12 X 1967, *Lent 1418,* AMES! CR! F! NY! Río Taus and Quebrada Azul, 760 m, 28 V 1972, *Lent 2548,* CR! Río Tepemechín, 4 km SE of Pejibaye, 650 m, 18 II 1973, *Lent 3177,* AAU! MO! Río Reventazón, 6 V 1949, *León 509,* US! Instituto Turrialba, 600 m, 11 VIII 1954, *León 4377,* USJ! SE of Pejibaye along Río Gato, 700 m, 16 IV 1983, *Liesner 14323,* MO! W of Taus, 750-800 m, 11 VIII 1974, *Maas 1234,* U! Santa Teresita, 1350 m, 16 XI 1991, *Mora s.n.,* USJ! Ibid. 19 IX 1991, *Mora 51,* USJ! Atirro, 600 m, IV 1896, *Smith 6799,* BR! US! Pejibaye, 900 m, 7 II 1926, *Standley 12457,* AMES! US! **Guanacaste:** El Arenal, 485-600 m, 18 I 1926, *Standley 45298,* AMES! **Limón:** Reserva Biol. Hitoy Cerere, Valle de La Estrella, 15 IX 1990, *Barrelier 45,* USJ! N of the camp Camp by the river Lari, 350 m, 29 II 1992, *Bittner 1367,* INB! Reserva Biol. Hitoy Cerere, Valle de La Estrella, 700 m, 21 IX 1990, *Carballo 252,* USJ! Cuenca del Río Uren, 1030 m, 25 X 1985, *Gómez 23840,* MO! Río Dantas and Río Barbilla, 250-419 m, 10 IX 1988, *Grayum 8953,* MO! between Río Xikiari and Río Boyei, 900-1000 m, 12 VIII 1995, *Grayum 10893,* MO x2! confluencia de Río Dantas y Río Cañon Seco, 200-300 m, 18 X 1988, *Herrera 2213,* MO! **PANAMA: Veraguas:** 2-5 mi N of Santa Fé, 500-1000 m, 12 XII 1971, *Gentry 3026,* MO! NW of Santa Fe, on slopes of Cerro Tute, 24 II 1975, *Mori 4783,* MO!

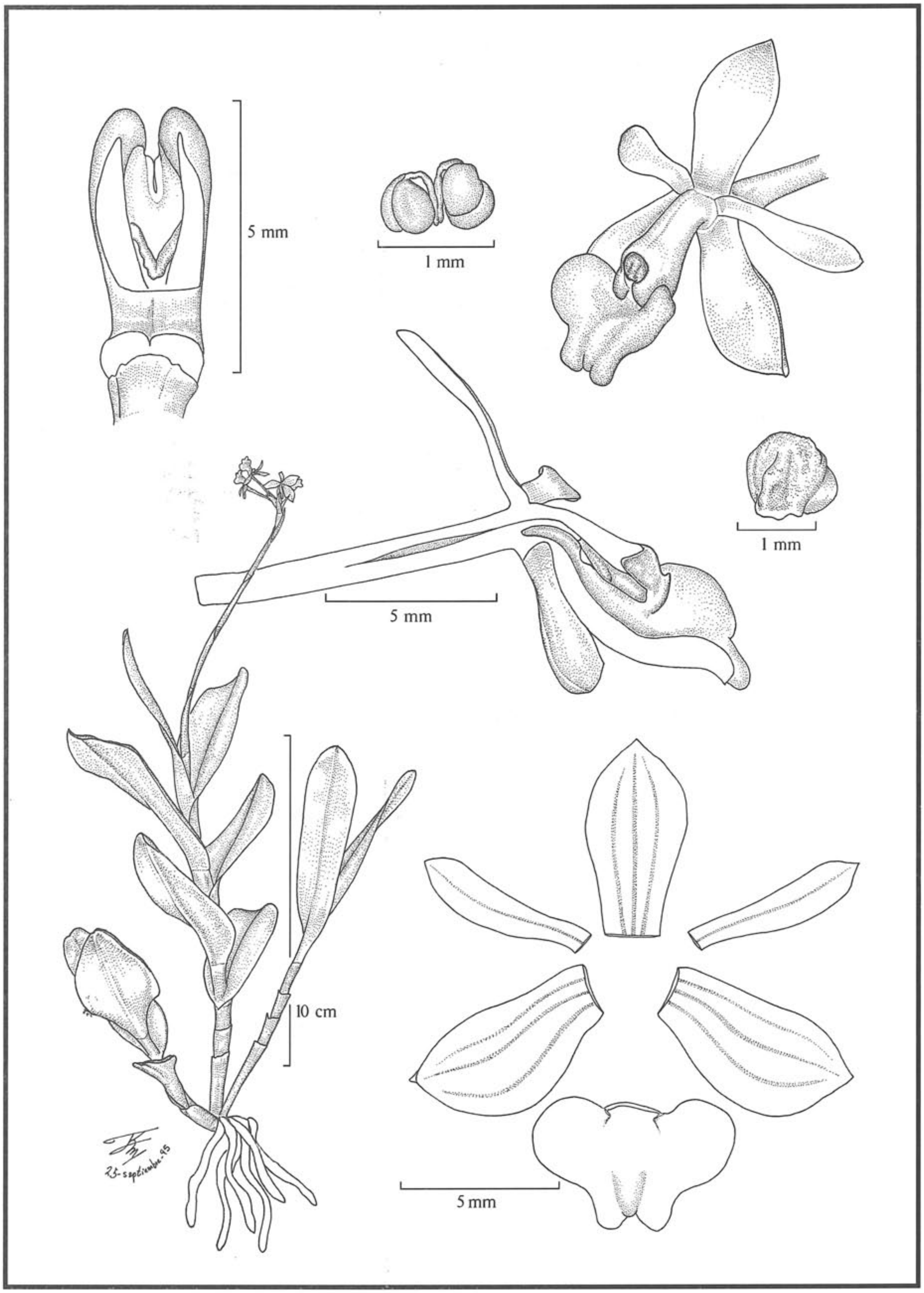
OTHER RECORDS: COSTA RICA: Without locality data, 30 VI 1992, *Pupulin 731,* color photo, in F. Pupulin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1. Hort. SEL, ex *Northen s.n.,* 5 IV 1977, illustration by Hágsater, AMO! Without locality, 24 VI 1873, *Saunders sub Day 54,* illustration, K!

EPIDENDRUM VINCENTINUM Lindl. Plate 1197

OTHER SPECIMENS: REPÚBLICA DOMINICANA: Cordillera central: carretera Bonao-Constanza, Firme de Casabito en la orilla de la carretera y por el firme, 1300-1400 m, *Dod 1523,* Herb. DOD x2! Alto Casabito, Bonao, In open thickets on slopes near the highest point, 1300 m, 13 III 1969, *Liogier 14757,* AMES! NY! **PUERTO RICO**: Río Grande & Naguabo Luquillo Mts., Rd 930-27 to Pico del Oeste, ca. 1 Km from gate, along ridge, ca. 740-800 m, 05 II 1984, *Ackerman 1931,* UPRRP! Orocovis, Cordillera Central, Toro Negro area, Lago Guineo, S side, 2970-3020 ft, 18 II 1984, *Ackerman 1943,* UPRRP! (Illustration voucher) Cayey, at Patillas border Cerro La Santa, 860-870 m, 14 II 1989, *Ackerman 2487,* UPRRP! Junquillo, lower slope, Mount Britton, 1 VI 1952, *Correll s.n.,* AMES! Guavate, 800 m, 28 VI 1963, *Liogier 9779,* NY x2! At the base of Pico Guilarte, Adjuntas, 1000 m, 18 VII 1963, *Liogier 10030,* AMES! NY! On summit of Cerro La Santa, Guavate mts., 903 m, 14 XII 1963, *Liogier 10428,* AMES! NY! Ibid., *Liogier 10429,* NY! Río Grande Luquillo, Mts. El Yunque, *Parrilla 39, UPRRP!* Mount Britton, 19 IV 1960, *Woodbury s.n.,* NY! US! **GUADELOUPE**: Without locality: *Herminier s.n.,* G! Marne, 2000 ft, 1839, *Beaupertuis s.n.,* P x2! Basoni Beu, bard in Galion, 25 II 1896, *Duss 3728,* US! *Duss 3728,* NY! **MARTINIQUE:** Without locality: *L. C. R. s.n.,* W! Morne Rouge, 800 m, 25 XI 1976, *Larsen 35402,* AAU! Mt. Pelée, 900 m, 25 XI 1976,

Larsen 35435, AAU! Le Carbet, 600-700 m, 29 XI 1976, *Larsen 35541*, AAU! Ibid., S of St. Pierre, 0-50 m, 26 XI 1976, *Larsen 35543*, AAU! Morne Clebasse, north of Morne Rouge, 650-760 m, 7 XII 1960, *Proctor 21721*, AMES! **COSTA RICA: Puntarenas**: Reserva Biológica Monteverde, Santa Elena, Finca San Gerardo, Vertiente Atlántica, 1000 m, 23I 1999, *Blanco 920*, USJ ! **Alajuela:** San Ramón camino a San Carlos, *Endres 347*, W x5! La Paz de San Ramón, 1025 m, 11 VI 1925, *Brenes (60) 1271*, F! **Limón:** Guápiles, El Alto de Bellavista, 720-900 m, 15 V 1998, *Pupulin 643*, USJ! **Cartago:** Reserva Tapanti, vertiente arriba de Quebrada Seca, 29 XI 1984, *Dressler 350*, USJ! La Esperanza, Río Atirro, 800 m, 8 VIII 1974, *Maas 1173*, U! Tapantí, 10 I 1985, *Mora 4*, USJ! **San José:** Along the Río Claro valley (Rio La Hondura drainage) below La Palma northeast of San Jeronimo, 1000-1200 m, 05 IV 1973, *Burger 9085*, F! **PANAMA**: Darién Ridge north of Cerro Pirre, 1050-1200 m, 11 VI 1977, *Dressler 5661*, AMO! **COLOMBIA: Antioquia**: Parque Nacional Natural "Las Orquídeas", Sector Calles, margen derecha del río Calles, 1310-1365 m, 27 III 1988, *Cogollo 2665*, JAUM! Valle del Cauca, Queremal, 10 I 1980, *Guarín 33*, COL! Valle del Cauca, Cali, westdordillere Cali, 2000 m, *Lehmann 3751*, G! **VENEZUELA**: Bolivar, Carretera El Dorado-Santa Elena de Uairén, km 125-128 al sur de El Dorado, 1200-1300 m, 3 VIII 1993, *Carnevali 3244*, MO! Amazonas, Parque Nacional Duida-Marahuaca 2728, Atabapo, Estacion D11, al NNO del "Savana Hills Camp´" de Tate, cerro Duida, inmediatamente al N de La Esmeralda, en el alto río Orinoco, 6 II 1975, *Tillett 752-301*, HB! NY! **ECUADOR**: **Esmeraldas:** Km 12 on road under construction from Lita to Alto Tambo (21 kms), 725 m, *Dodson 17174A*, MO! **Imbabura:** Lita SE of Lita on road to Santa Rosa de Cachaco, 1300 m, 19 III 1991, *Luer 15172*, AMO! **Pichincha:** Road to Malatos north of Chiriboga on old road Quito to Santo Domingo, 1300 m, *Hirtz 3985*, MO! **Pastaza:** Region of Puyo, 13 X 1961, *Dodson 999*, SEL! **Tungurahua**: Mera on the road Baños to Puyo, 1200 m, 13 IV 1985, *Hirtz 2524*, RPSC! **El Oro:** 10 km west of Piñas along new road from Piñas-Machala, 900 m, 19 VII 1979, *Dodson 8473*, SEL! **PERU:** Without locality, *Ryan s.n.*, W! Cusco, Paucartambo, Puente Unión Qóiñipata, 1550 m, 1 I 1994, Moscoso 589, MO!

OTHER RECORDS: **COLOMBIA: Valle del Cauca:** Queremal, *Dressler s.n.*, diapositiva de planta viva, AMO! **COSTA RICA**: Cartago, Orosi, road to the Tapantí National Park, along the border of Río Garande de Orosí, 1170 m, *F. Pupulin 2267* (Vanishing Beauty). **GUADELOUPE**: *Feldmann s.n.*, Photo (Feldmann 2001). **MARTINIQUE**: slide of live plant, *Hágsater s.n.*, AMO! **TRINIDAD & TOBAGO**: Heights of Aripo, 10-26 I 1922, *Broadway s.n.*, TRIN [9905], NY (citado por Schultes 1960).



EPIDENDRUM ANCEPS Jacq. **Plate 1101**

EPIDENDRUM ANCEPS Jacq., Select. Stirp. Amer. Hist. 224, t. 138, 1763.

Type: MARTINIQUE: Without locality, *Jacquin s.n.* (Lectotype, designated by Garay and Sweet, 1974: 159 [fragment of a specimen which appears to be the basal half of the plant from which the illustration was prepared, including the first leaf, but lacking the inflorescence]: BM!). Epitype (here designated): MARTINIQUE: Bois de Fond, St. Demo au Lovian, *Père Duss 10296*, NY! Not *E. anceps* Sw., Prodr. Veg. Ind. Occ. 121. 1788. = *E. bifarium* Sw.

Synonyms: *Amphiglottis anceps* (Jacq.) Britton, in Britton & Wilson, Bot. Porto Rico & Virgin Is. 5: 200. 1824. *Epidendrum anceps* var. *typicum* Stehlé, Fl. Descr. Ant. Fr. 1: 135. 1939, *nom. superfl. Epidendrum fuscatum* Smith, Spicil. Bot. 21, t. 23. 1792. Holotype: JAMAICA: Hort. *Mrs. Barrington.* LINN! *Tritelandra fuscata* (Smith) Rafinesque, Fl. Tell. 2: 86. 1837. *Amphiglottis lurida* Salisb., Trans. Hort. Soc. Lond. 1: 294. 1812, *nom. Superfl.* (Salisbury cited *Epidendrum anceps* Jacq. as synonym of *Amphiglottis lurida*, which was validly published and predated his name). Specimen cited in the protologue: JAMAICA: 1790, ex Hort. *Brooke Boothby,* most likely not preserved (see Stafleu, F. A., & R. S. Cowan, 1985. Taxonomic Literature, 2 ed., 5: 3.). *Epidendrum virescens* Lodd., Bot. Cab. 19: t. 1867. 1832. Type: DOMINICA, *Miller s.n.* Holotype: most likely not preserved. Lectotype (here designated): illustration, Botanical Cabinet 19: t. 1867. *Non* Poir., 1810. *Epidendrum anceps* var. *virescens* (Lodd.) Lindley in Hemsley, Godman & Salvin, Biol. Centr. Am.; Bot. 3: 255. 1883. *Epidendrum secundum* Jacq. sensu Garay & Sweet, Arnold Arb. 53(3): 392, 394. 1972.

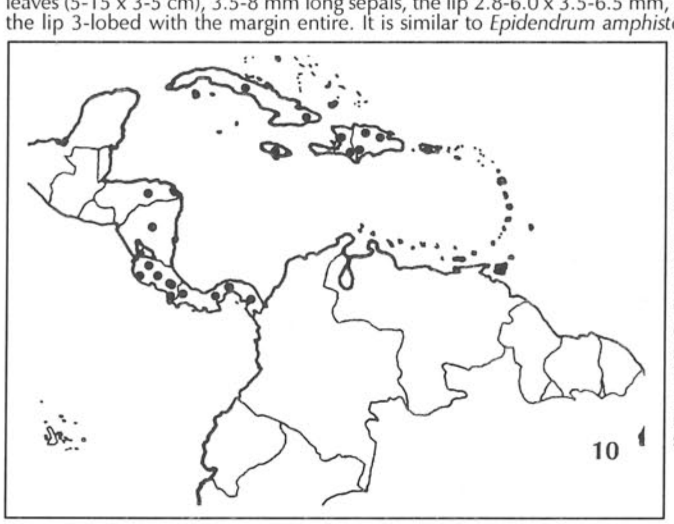
Hierba epífita y litófita, simpodial, cespitosa, 20-60 (80) cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, gruesas, 2-4 mm de grosor. **Tallos** sencillos, tipo caña, ancipitosos, rectos, 8-30 x 0.2-1.0 cm. **Hojas** 5-9, dísticas, distribuidas a lo largo del tallo, verde oscuro; vaina foliar tubular, ancipitosa, estriada en seco, 1.3-2.5 cm de largo; lámina elíptica, oblanceolada a obovada, obtusa a asimétricamente bilobada, mucronada, coriáceas, carina dorsal evidente, 5-15 x 3-5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, el racimo subcorimboso, denso, floreciendo durante varios años consecutivos del mismo escapo, dando la apariencia de una inflorescencia paniculada, 4.0-37.0 cm de largo; pedúnculo largo, ancipitoso, 2-33 cm de largo; cubierto por 3-12 brácteas imbricadas, tubulares, lateralmente comprimidas, oblongas, agudas a obtusas, 1.5-7.5 x 0.3-0.8 cm. **Brácteas florales** mucho más cortas que el ovario, abrazadoras, triangular ovadas, acuminadas, 1.5-3.5 x 1.0-1.5 mm. **Flores** 6-15 por racimo, simultáneas, no resupinadas, verdes en ocasiones con tintes café, fragancia no registrada. **Ovario** ligeramente inflado hacia el ápice, terete, no ornamentado, 5-10 mm de largo. **Sépalos** extendidos, libres, obovados, agudos, mucronados, subcoriáceos, margen entero, extendido, el **dorsal** 3-nervado, 3.5-8.0 x 2-3 mm; **laterales** oblicuos, 3-5 nervados, 4.0-8.6 x 2.4-3.4 mm. **Pétalos** extendidos, angostamente oblanceolados a espatulados, agudos, 1-nervados, margen entero, extendido, 4.8-7.0 x 0.7-1.2 mm. **Labelo** unido a la columna, trilobado, base cordada, ligeramente cóncavo, carnoso, margen entero, extendido; ecalloso, unicarinado, la carina evidente, carnosa y amplia, prolongándose hasta la mitad del labelo, 2.8-6.0 x 3.5-6.5 mm; lóbulos laterales semiorbiculares, 1.3-2.3 x 2.0-2.3 mm; lóbulo medio subcuadrado, retuso, mucronado, 0.8-1.2 x 2.0-2.4 mm. **Columna** arqueada en la base, dilatada hacia el ápice, delgada en la base, 4-6 mm de largo. **Clinandrio** corto, margen entero. **Antera** obovoide, 4-locular. **Polinios** 4, ovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, de longitud similar a la de los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/4 de la longitud de la cavidad estigmática. **Nectario** corto, sin penetrar al ovario, no ornamentado. **Cápsula** ovoide, pedicelo 6-8 mm de largo, cuerpo 16-20 mm, cuello apical 1.3-1.7 mm de largo.

Epiphytic or lithophytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, ancipitose, straight. **Leaves** 5-9, distributed throughout the stem, dark green; sheath tubular, ancipitose, striated when dry; blade elliptic, oblanceolate to obovate, obtuse to unequally bilobed, mucronate, coriaceous, with an evident dorsal keel. **Inflorescence** apical, racemose to pluriracemose, subcorymbose, dense, producing new racemes consecutively from the same inflorescence, thus appearing paniculate with time; peduncle long, ancipitose, covered by 3-12 imbricating, tubular, laterally compressed, oblong, acute to obtuse bracts. **Floral bracts** much shorter than the ovary, amplexicaul, triangular-ovate, acuminate. **Flowers** 6-15 per raceme, simultaneous, non-resupinate, green, sometimes tinged brown. **Ovary** slightly inflated towards the apex, terete, smooth. **Sepals** spreading, free, obovate, acute, mucronate, subcoriaceous, margin entire, spreading, the dorsal sepals 3-veined, the lateral sepals oblique, 3-5-veined. **Petals** spreading, narrowly oblanceolate to spatulate, acute, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate, slightly concave, fleshy, margin entire, spreading; ecallose, with a single evident, fleshy, wide keel running down the lip to the middle of the lip; lateral lobes semiorbicular; midlobe subquadrate, retuse, mucronate. **Column** arching at the base, dilated towards the apex, base thin. **Clinandrium-hood** short, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles soft and granulose, about as long as the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** short, without penetrating the ovary, smooth. **Capsule** ovoid, pedicle slightly less than half as long as the body, apical neck short.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Distributed in Central America (Honduras, Nicaragua, Costa Rica and Panama), and throughout the Antilles (Cuba, Jamaica, Haiti, Dominican Republic, Puerto Rico, Guadalupe, Martinique, Santa Lucia, Saint Vicente, Grenada, Trinidad and Tobago) and South America (Guyana, Surinam, French Guiana) adjacent to the lesser Antilles. Epiphytic and lithophytic in wet forests, from sea level to 1500 m altitude. Flowering throughout the year.

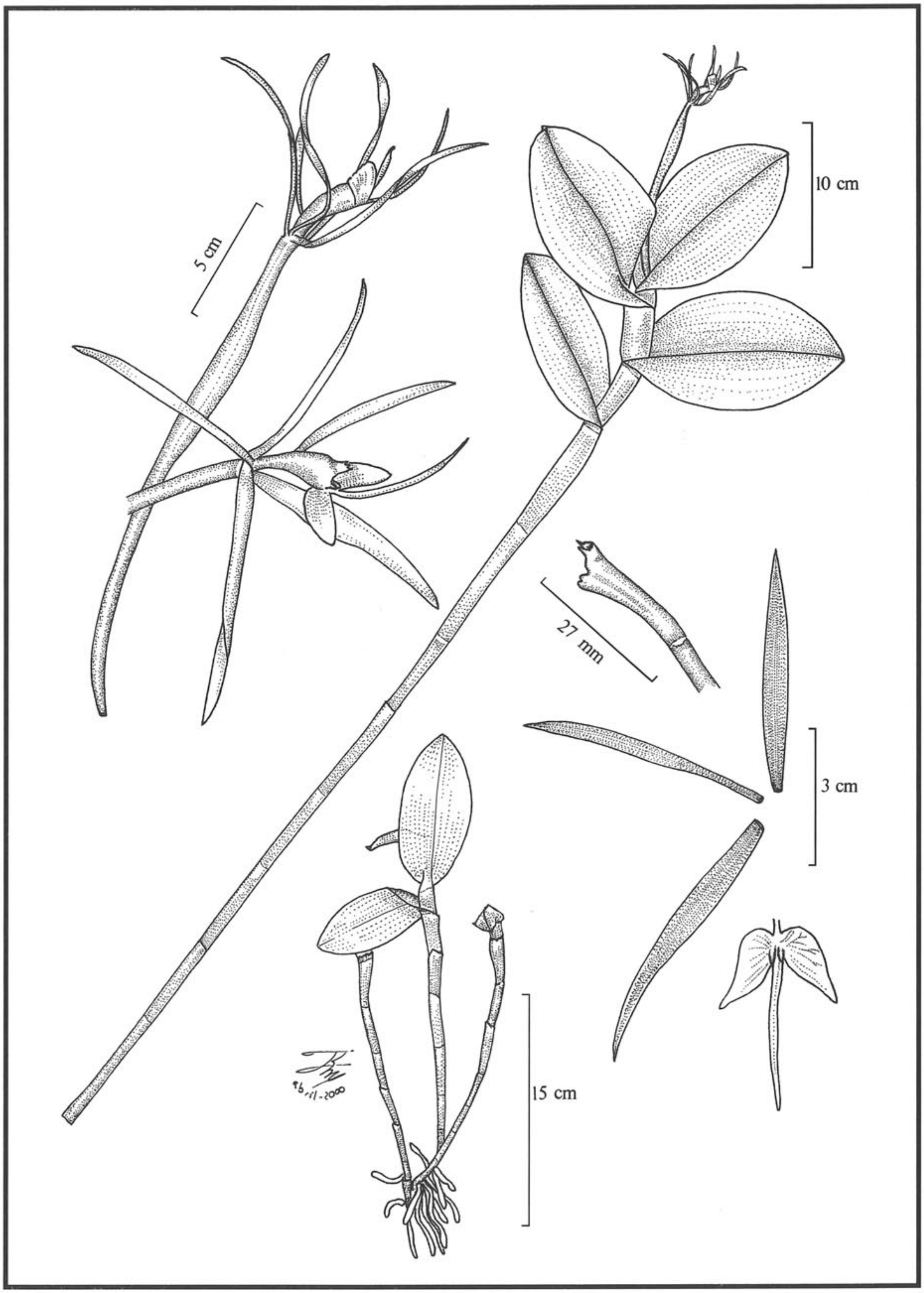
RECOGNITION: *Epidendrum anceps*, belongs to the Anceps Group, which is recognized by the simple stems, generally elongate, compound racemose inflorescence producing new successive racemes with time, fleshy flowers, filiform to narrowly oblanceolate petals; and the Anceps Subgroup which has short, subcorymbose racemes. The species can be recognized by the generally long, wide leaves (5-15 x 3-5 cm), 3.5-8 mm long sepals, the lip 2.8-6.0 x 3.5-6.5 mm, the plants and flowers green, rarely tinged with brown, and the lip 3-lobed with the margin entire. It is similar to *Epidendrum amphistomum* A. Rich. from the United States (Florida), Cuba and Hispaniola, which has larger plants, up to 110 cm tall, and the greenish yellow to brown red flowers, the lip bilobed. *Epidendrum galeottianum* A.Rich. & Galeotti, which ranges from Mexico to central Nicaragua, also has taller plants, 25-100 cm high, longer, purple leaves (4.5-23 cm), and the sepals and petals are greenish brown, with the apex of the columna and the lip purple. *Epidendrum musciferum* Lindl., which ranges from Panama and throughout the Amazon basin in South America, has shorter, narrower leaves (2-13 x 1.3-3.4 cm), smaller flowers (sepals being 4.5-6.0 mm long), cinnamon brown to yellow, sometimes tinged with purple, or greenish, yellowish to orange, with the lip tinged with reddish, green or yellow, and the column greenish, the apical half occasionally white.



CONSERVATION STATUS: DD. Data deficient. The species is widespread and common in Antilles and scarce in Honduras, Nicaragua, Costa Rica and Panama.

ETYMOLOGY: From the Latin *anceps*, two edged, in reference to the stem which is laterally compressed with sharp edges.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM ANGUSTILOBUM Fawc. & Rendle **Plate 1102**

EPIDENDRUM ANGUSTILOBUM Fawc. & Rendle, J. Bot. 47: 124. 1909.

Type: Jamaica: Rose Hill, 4000 ft., ***Harris 10485.*** UCWI (cited as seen by Nir, 2000).

Synonyms: *Epidendrum nocturnum* Jacq. var. *latifolium* Lindl., Bot. Reg. 23: t. 1961, 1837. Type: West Indies, Introduced and cultivated Chatsworth, ***Paxton s. n.,*** K-L. *Amphiglottis nocturna* (Jacq.) Britton & Wilson var. *latifolia* (Lindl.) Acuña, Bol. Estación Exp. Agron. Santiago Las Vegas 60: 100. 1939. *Epidendrum latifolium* (Lindl.) Garay & Sweet., J. Arnold Arb. 53(3): 392, 1972.

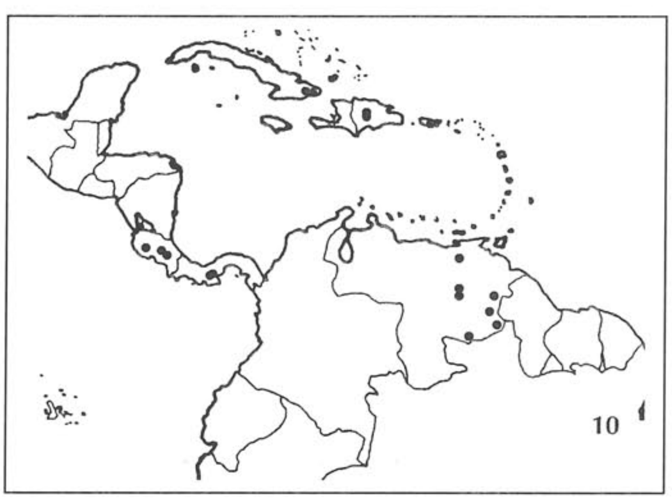
Hierba epífita raramente litófita, simpodial, cespitosa, 27-64 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, ancipitosos, 15-43 x 0.5-1.7 cm. **Hojas** 3-6, distribuidas en la mitad apical del tallo, coriáceas; vaina foliar tubular, lateralmente comprimida, ancipitosa, 2.0-5.0 cm de largo; lámina ovada elíptica, bilobada, carina dorsal evidente, 8-12 x 2-7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa a pluriracemosa, produce una flor a la vez y florece durante varios años. **Bráctea floral** mucho más corta que el ovario, abrazadora, triangular, acuminada, 3.0-8.0 x 2-3 mm. **Ovario** largo, terete, no inflado, no ornamentado, 120-200 x 1.5-3.0 mm. **Flores** una a la vez por racimo, si hay dos a tres, producidas de diferentes racimos, sucesivas, resupinadas, frecuentemente cleistógamas, sépalos y pétalos verde a verde amarillentos, labelo y columna blanco, los callos amarillo pálido, fragancia no registrada. **Sépalos** extendidos, linear lanceolados, acuminados, 10-12 nervados, margen entero, revoluto, 42-65 x 3-5 mm. **Pétalos** extendidos, linear lanceolados, acuminados, 7-9 nervados, margen entero, revoluto, 47-65 x 1.5-3.0 mm. **Labelo** unido a la columna, trilobado, margen entero, extendido, 30-50 x 20-25 mm; bicalloso, los callos laminares, prominentes, agudos; lóbulos laterales oblicuos ovado triangulares, agudos, 16-25 x 6-8 mm; lóbulo medio linear lanceolado, acuminado, con el margen revoluto, 36-45 x 1.0-1.7 mm. **Columna** ligeramente arqueada, dilatada hacia el ápice, 15-25 x 2.0-4.5 mm. **Clinandrio** prominente, eroso dentado. **Antera** ovoidea, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** reducidos. **Nectario** penetrando casi todo lo largo del ovario. **Cápsula** elipsoide, larga; pedicelo de 70-90 x 2-3 mm, cuerpo 35-60 x 15-22 mm, ocupa alrededor de 1/3 a 1/2 de la longitud total y se localiza arriba de la mitad, cuello apical 10-20 x 2.0-3.0 mm.

Epiphytic, rarely lithophytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, laterally compressed, ancipitose. **Leaves** 3-6, distributed along the apical half of the stem, coriaceous; sheath tubular, laterally compressed, ancipitose; blade ovate-elliptic, bilobed, with an evident dorsal keel, about twice as long as it is wide. **Inflorescence** apical, racemose to pluriracemose, produceing one flower at a time, and flowering over several years. **Floral bract** much shorter than the ovary, amplexicaul, triangular, acuminate. **Ovary** very long, terete, not inflated, smooth, about 2-3 times longer than the sepals. **Flowers** one at a time per raceme, if 2 or 3, from different racemes, successive, resupinate, frequently cleistogamous, sepals and petals green to yellowish green, lip and column white, the calli pale yellow. **Sepals** spreading, linear-lanceolate, acuminate, 10-12 veined, margin entire, revolute. **Petals** spreading, linear-lancelate, acuminate, 7-9-veined, margin entire, revolute. **Lip** united to the column, 3-lobed, margin entire, spreading; bicallose, the calli laminar, prominent, acute; lateral lobes obliquely ovate-triangular, acute; midlobe linear-lanceolate, acuminate, margin revolute, about twice as long as the lateral lobes. **Column** slightly arched, dilated towards the apex. **Clinandrium-hood** prominent, erose-dentate. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** penetrating nearly the whole length of the ovary. **Capsule** ellipsoid, long, pedicel about half the total length, body occupying 1/3 to ½ the length and located beyond the middle, apical neck comparatively short.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widely distributed in the Antilles, Colombia, Venezuela and the Guyanas, rare in Costa Rica and Panama. Epiphytic, rarely lithophytic, in wet forests from 500 to 2000 m altitude. Flowering throughout the year.

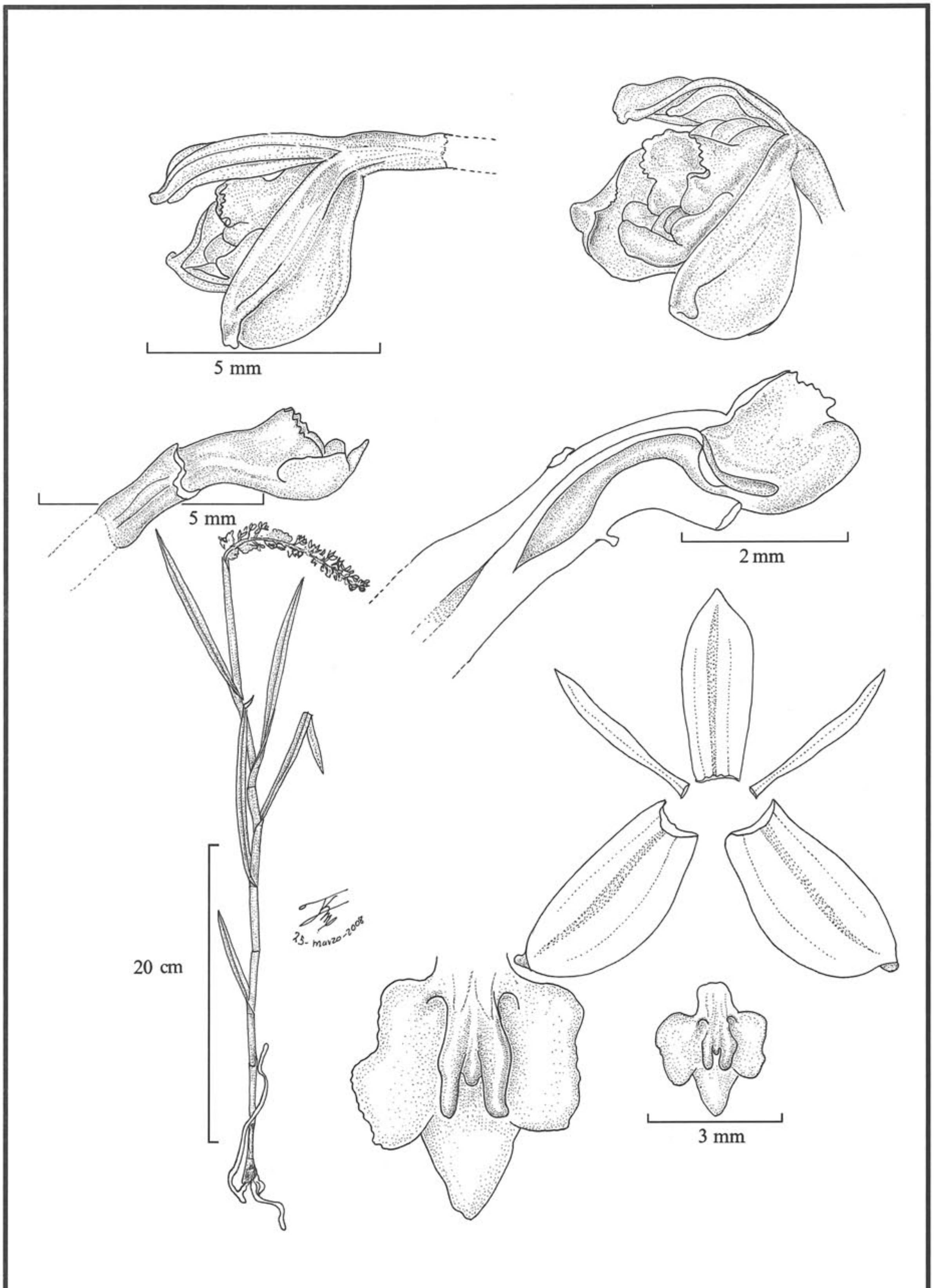
RECOGNITION: *Epidendrum angustilobum* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, short, racemose or pluri-racemose inflorescence, without spathaceous bracts, usually large, star-shaped flowers, with similar sepals and petals, and the Nocturnum Subgroup which has cane-like stems, non-thickened towards the middle, and usually successive flowers; the flowers are mostly indistinguishable in shape. The species can be recognized by the laterally compressed, ancipitose stems, relatively wide leaves, to 7 cm wide, 2-3 times longer than wide, long ovary (120-200 mm), and the body of the capsule clearly above the middle of its length. *Epidendrum nocturnum* Jacq., is very widespread, has terete stems, relatively short and narrow leaves, with a short ovary, about as long as the sepals, 45-62 mm long, with the body of the capsule in the middle and occupying nearly the whole length. *Epidendrum carpophorum* Barb. Rodr. ranges along the Altantic in Venezuela, the Guyanas to southeastern Brazil, it also has relatively wide leaves, but the ovary is shorter, 60-120 mm long. *Epidendrum macroophorum* Hágsater from Panama to the Pacific slope of South America in Colombia, Ecuador and northern Peru, and has leaves 3-4 times longer than wide, with a very long ovary, 220-300 mm long. *Epidendrum portoricense* Hágsater & Ackerman is endemic to Cuba and Puerto Rico and has relatively narrow leaves, 2-4 cm wide, and a shorter ovary, 80-115 mm long, with the body of the capsule slightly above the middle.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the *Latin anguste*, narrow, and *lobus*, lobe, in reference to lateral lobes of the lip which are comparatively narrow in this species when se against those of *E. nocturnum*.

REFERENCES: Nir, M. A., 2000. *Orchidaceae Antillanae*. DAG Media Publishing. New York pg 123.



EPIDENDRUM ARCUIFLORUM Ames & C.Schweinf. **Plate 1103**

EPIDENDRUM ARCUIFLORUM Ames & C.Schweinf. Schedul. Orchid. 10: 58. 1930.

Type: COSTA RICA: La Fuente, 1200 m, 27 October 1925, ***Anastasio Alfaro 212***. Holotype: AMES 33652! (Illustration voucher). Isotypes: US 1315809! US 1315810!

Hierba epífita, simpodial, cespitosa, erecta, 22-45 cm de alto. **Raíces** basales, delgadas, blancas, ca. 1-2 mm de grosor. **Tallos** sencillos, tipo caña, delgados, subteretes en la base, lateralmente aplanados hacia el ápice, ligeramente ancipitosos, algo sinuosos, 11.5-23 x 0.1-0.6 cm; cubiertos en la mitad basal por vainas no foliosas, tubulares, escariosas, fibrosas con el tiempo, 2.6-3.5 cm de largo. **Hojas** 4-7, distribuidas en la mitad apical del tallo, dísticas, articuladas, suberectas, la basal generalmente más pequeña; vainas tubulares, ancipitosas, estriadas, 1.0-3.5 x 0.25-0.5 cm; lámina linear lanceolada, aguda, diminutamente apiculada, margen entero, 1.7-12 x 0.5-1.3 cm. **Brácteas espatáceas** 1 a 2, tubulares, agudas, ancipitosas, imbricadas, 2.2-9 cm de largo. **Inflorescencia** apical, racemosa, arqueada-colgante, florece una sola vez, pluriflora, densa, 7-22 cm de largo; pedúnculo, delgado, lateralmente aplanado, ancipitoso, recto, oculto casi en su totalidad por las brácteas espatáceas, 4-10.5 cm de largo. **Brácteas florales** tan largas como el ovario, linear lanceoladas, acuminadas, abrazadoras, gradualmente más pequeñas hacia el ápice del racimo, 3-8 mm de largo. **Flores** 30-70, carnosas, simultáneas, resupinadas, sépalos y pétalos verdes a verde pardusco, labelo amarillento a naranja con los márgenes blancos, columna verdosa en la mitad basal, blancuzca hacia la mitad apical; sin datos de fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, 4-6 mm de largo. **Sépalos** libres, entreabiertos, cárnosos, agudos, 3-nervados, margen entero, extendido; el **dorsal** casi paralelo a la columna, obovado-elíptico; 2.5-4 x 1-2 mm; los **laterales** obovados, oblicuos, con una quilla dorsal alta y prominente, 2.5-4.5 x 1.5-2.5 mm. **Pétalos** entreabiertos, libres, lineares, agudos, 1-nervados, margen entero, extendido, 2-4 x 0.3-0.4 mm. **Labelo** unido a la columna, carnoso, trilobado, base cordada, 1.7-3 x 2.6-4 mm; bicalloso, los callos prominentes, laminares; disco con un par de cunículos a cada lado de los callos y con una quilla intercallosa muy corta; lóbulos laterales abrazando a la columna en posición natural, ovados, subagudos, margen eroso, 1.2-2.3 x 1.3-4 mm; lóbulo medio incurvado en posición natural, lanceolado a subtriangular, obtuso, margen entero, 0.8-1.4 x 0.7-1 mm. **Columna** corta, gruesa, arqueada en la mitad basal, el ápice con un par de alas laterales, prominentes, redondeadas, ligeramente arqueadas hacia arriba, 2-3 mm de largo. **Clinandrio** reducido, profundamente emarginado, margen denticulado. **Antera** semiglobosa, cortamente bidentada en el ápice. **Polinios** ovoideos, lateralmente aplanados. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** pequeños, ocupando 1/3 de la cavidad estigmática. **Nectario** penetrando ligeramente justo detrás del perianto, no inflado, no ornamentado. **Cápsula** elipsoide, con el perianto persistente; cuerpo 10 x 7 mm; pedicelo corto, ca. 2 mm de largo; cuello apical obsoleto.

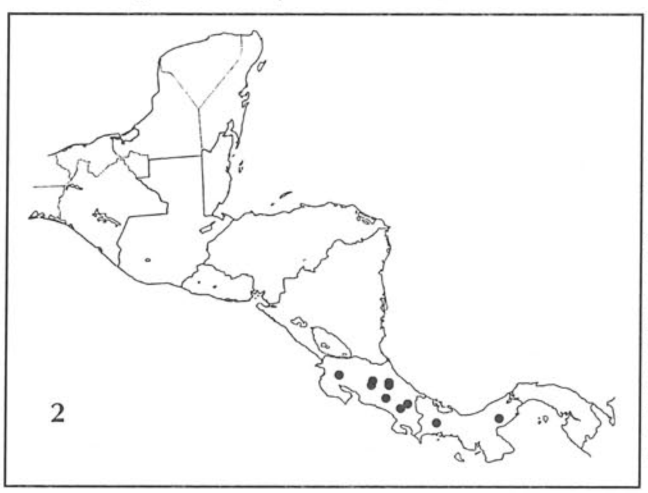
Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, thin, white. **Stems** simple, cane-like, thin, subterete at the base, laterally compressed above, slightly ancipitose, somewhat sinuous; the basal half covered by no foliar, tubular, scarious sheaths, becoming fibrous with time. **Leaves** 4-7, distributed along the apical half of the stem, distichous, articulate, suberect, the basal one generally smaller; sheaths tubular, ancipitose, striated; blade linear-lanceolate, acute, minutely apiculate, margin entire. **Spathaceous bracts** 1-2, tubular, long and narrow, ancipitose, acute, imbricating. **Inflorescence** apical, racemose, arching-nutant, flowering only once, densely many-flowered; peduncle thin, laterally compressed, ancipitose, straight, nearly totally hidden within the spathaceous bracts. **Floral bracts** as long as the ovary, linear-lanceolate, acuminate, embracing, gradually smaller towards the apex of the raceme. **Flowers** 30-70, fleshy, simultaneous, resupinate, sepals and petals green to greenish brown, lip yellowish to orange with the margins white, basal half of the column greenish, apical half whitish. **Ovary** terete, thin, not inflated, smooth. **Sepals** free, partly spreading, fleshy, acute, 3-veined, margin entire, spreading; the dorsal sepals nearly parallel to the column, obovoid-elliptic; the lateral sepals obovoid, oblique, with a high, prominent dorsal keel. **Petals** partly spreading, free, linear, acute, 1-veined, margin entire, spreading. **Lip** united to the column, fleshy, 3-lobed, base cordate; bicallose, the calli prominent, laminar; disc with a cuniculus on each side of the calli, and a very short central keel; lateral lobes embracing the column in natural position, margin entire, midlobe incurved in natural position, lanceolate to sub triangular, obtuse, margin entire. **Column** short, thick, arched at the basal half, the apex with a pair of prominent, rounded, wings, slightly arching upwards. **Clinandrium-hood** reduced, deeply emarginate, margin denticulate. **Anther** semiglobose, short-bidentate at the apex. **Pollinia** ovoid, laterally compressed. **Rostellum** subapical, spit. **Nectary** slightly penetrating the ovary just behind the perianth, not inflated, smooth. **Capsule** ellipsoid, perianth persistent, pedicel short, apical neck obsolete.

OTHER SPECIMENS: COSTA RICA: Without locality data, *Mason C14360*, E! **Cartago:** La Fuente, 1150 m, 12 XI 1924, *Alfaro s.n.*, US 1207185! Ibid. 1200 m, 10 IV 1925, *Alfaro s.n.*, US 1208109! La Flor, Peralta, 2600 ft, X 1925, *Lankester 1090*, AMES! BM! Palomo de Santa Teresita, 1350 m, 30 IX 1993, *Mora de Retana s.n.*, USJ! **Guanacaste:** Los Ayotes, near Tilarán, 600-700 m, 21 I 1926, *Standley 45604*, US! **[Heredia:]** Camino a San Joaquín, 18 IX 1991, *Dressler s.n.*, USJ! **Puntarenas:** Cantón de Buenos Aires Ujarrás, El Carmen, estribaciones de Cerro Amú, 1900 m, 29 IX 1989, *Herrera 3595*, AMO x2! MEXU! **San José:** San Gerardo de Rivas, 1210 m, 16 IX 1991, *Alfaro 400*, INB! MO! P.N. Chirripó, camino a Cerro Chirripó, 1400-1450 m, 31 VII 1995, *Gamboa 550*, INB! San Isidro del General, Chirripó, Canaan, 1000 m, 8 III 1988, pressed cult. 26 IX 1986, *Hágsater 8236*, AMO! INB! Ibid. pressed cult. 8 III 1988, *Hágsater 8236*, AMO! Ibid. pressed cult. 29 IX 1988, *Hágsater 8236*, AMO! Ibid. pressed cult. 2 XII 1988, *Hágsater 8236*, AMO! **PANAMÁ: Chiriquí:** Chiriquí, 4000 ft, *Powell 228*, AMES 23808!*(Illustration, AMO!) MO 956039! (Illustration, AMO!) Chiriquí, 23 X, Hort. *Powell 228* (*Powell 3456*), AMES 27462! Cerro Horqueta, ca. 1650 m, 13 VIII 1974, *Croat 26902*, MO! **Coclé:** Hort. Coronado, pressed cult. 15 III 1982, *Hágsater 6418*, AMO! Ibid. pressed cult. 5 XII 1982, *Hágsater 6418*, AMO!

OTHER RECORDS: COSTA RICA: Without collecting data, flowered at the Orchid Exhibition of Alajuela, photographed: 28 X 1999, photo published (as *Epidendrum powellii* Schltr.) in Vanishing Beauty: Native Costa Rican Orchids Vol. 1: 296. 2005. Without locality data, 1 X 1968, *R. Lucas Rodríguez 640*, xerox of illustration, AMO! **San José:** San Isidro del General, Chirripó, Canaan, 1000 m, 8 III 1988, *Hágsater 8236*, spirit, flower card and illustration, AMO! **PANAMÁ: Chiriquí:** Republic of Panama, Chiriquí, 4000 ft, *Powell 228*, Illustration, AMES 26914! **Coclé:** Hort. Coronado, pressed cult. 29 XI 1982, *Hágsater 6418*, flower card and slide, AMO!

DISTRIBUTION AND ECOLOGY: Ranging from along the summit the cordillera in Costa Rica and western Panama, at 600-1900 m altitude. Flowering from July to November.

RECOGNITION: *Epidendrum arcuiflorum* belongs to the Alpicolum Group and Subgroup which is characterized by the simple, cane-like stems, long, narrow 1-2 spathaceous bracts, fox-tail-like inflorescence and numerous flowers with fleshy lip, triangular midlobe and roundish lateral lobes. The species is recognized by the strongly arching basal half of the column with a pair of prominent lateral, rounded, apical wings, and the much reduced, bifid clinandrium-hood, which leaves the anther totally exposed, the lateral lobes of the lip are ovate, and the midlobe lanceolate to subtriangular, shorter than the lateral lobes. *Epidendrum powellii* Schltr. has a totally different, truncate, slightly arching column with a short, entire clinandrium-hood covering the anther; the lateral lobes of the lip are dolabriform, and the midlobe ensiform, longer than the lateral lobes.



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***NOTE:** Christenson (1991) used this specimen to lectotipify *Epidendrum powellii*, but after dissecting a flower thereof, we are convinced that it does not correspond to that species.

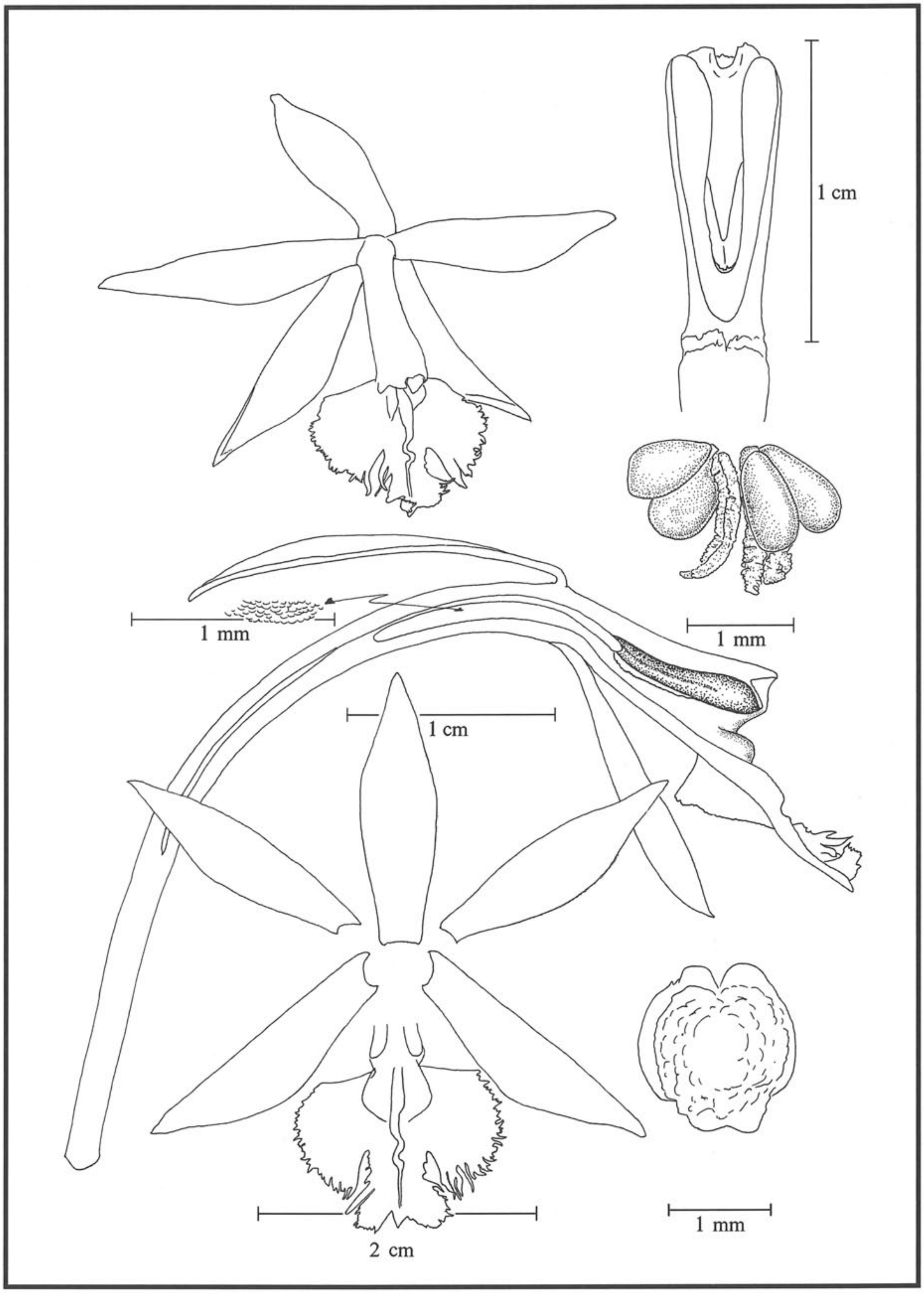
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *arcuatus*, arched like a bow, and *flos*, flowers, in reference to the arching raceme of the inflorescence.

REFERENCES: Christenson, E.A., 1991, Mesoamerican Orchid Studies II: Powell's Panamanian Orchidaceae, **Lindleyana** 6 (3): 124-132. Hágsater, E. 2005. Epidendrum in F., Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 296, San José C.R. Editorial de la Universidad de Costa Rica.

Authors: E. Santiago & E. Hágsater   Illustrator: R. Jiménez M.   Editors: E. Hágsater & L. Sánchez S.

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EPIDENDRUM BAUMANNIANUM Schltr. **Plate 1104**

EPIDENDRUM BAUMANNIANUM Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 126. 1920.

Type: [COLOMBIA]: Cauca: ca. 1000 m, ***M. Madero s.n.***. Holotype: B (destroyed). Neotype: (here designated): COLOMBIA: Cauca: Cortina presa Anchicayá, 600 m, 26 April 1983, pressed cult. 10 April 1984, ***E. Hágsater, R. L. Dressler & J. Folsom 7365.*** AMO! (Illustration voucher.)

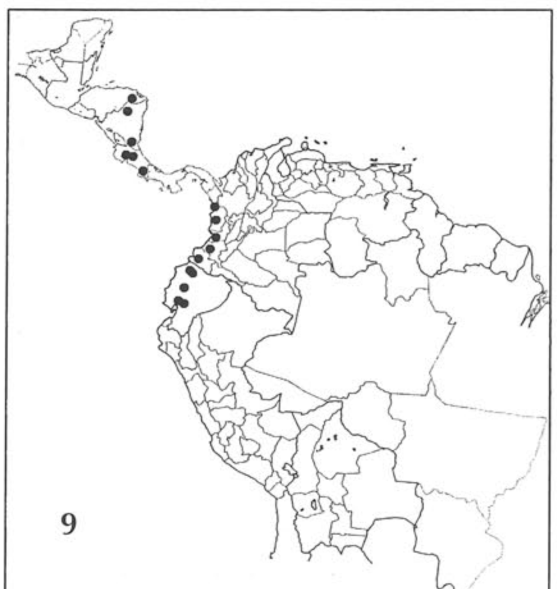
Hierba epífita, litófita, o raramente terrestre, ocasionalmente mirmecófila, simpodial, cespitosa, de 50-115 cm de alto. **Raíces** basales, delgadas, blancas, 1.0-2.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, erectos, rectos, 38-60 x 0.35-0.85 cm; cubiertos en la base por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 38-60 mm de largo. **Hojas** 6-10, distribuidas en la mitad apical del tallo, dísticas, suberectas, articuladas; vaina tubular, finamente estriada, 20-70 x 3.5-10 mm; lámina oblonga a oblongo elíptica, ápice obtuso, ligeramente bilobado, coriácea, margen entero, extendido, 5-12.5 x 1.6-3.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, elongada, racemosa, erecta, (produciendo un racimo adicional cerca del ápice del pedúnculo cuando el racimo inicial ha dejado de florecer), pluriflora, 21-50 cm de largo; pedúnculo alargado, terete, delgado, erecto, ligeramente sinuoso, 19-50 cm de largo; cubierto casi en su totalidad por 6-7 brácteas tubulares, subagudas, finamente estriadas, escariosas, 20-66 mm de largo; raquis corto, 2-6 cm de largo. **Flores** 6-30, simultáneas, resupinadas, color naranja rojizo, ápice de la columna, callos y quilla amarillos; sin datos de fragancia. **Brácteas florales** mucho más cortas que el ovario, linear triangulares, acuminadas, abrazadoras, 3-7 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, algo arqueado, de color naranja-rojizo, 28-50 mm de largo. **Sépalos** libres, cortamente acuminados, 7-nervados, margen entero, extendido, 12.5-20 [25] x 4.0-5.5 mm; el **dorsal** reflexo, angostamente oblanceolado; los **laterales** extendidos, oblongos, muy oblicuos. **Pétalos** extendidos, libres, oblongos, cortamente acuminados, 5-nervados, margen entero, extendido, 12-20 [24] x 4.0-5.0 mm. **Labelo** unido a la columna, trilobado, base truncada, margen dentado, 8-12 x 12-15 mm; bicalloso, los callos prominentes, laminares, ligeramente divaricados; disco provisto de una quilla intercallosa, laminar, delgada, sigmoide, alargada hasta el seno apical; lóbulos laterales dolabriformes, 6-9 x 6-8 mm; lóbulo medio con un istmo subcuadrado en la base, flabelado en el ápice, apiculado, 5-7 x 6-8 mm. **Columna** delgada, recta, apicalmente ligeramente dirigida hacia arriba, con un par de apéndices deltoides, 9-11 mm de largo. **Clinandrio** corto, entero, margen ligeramente dentado. **Antera** ovoide, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas en forma de tejas apiladas, ligeramente más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes. **Nectario** penetrando ¼ del ovario, delgado, no inflado, liso, diminutamente papiloso. **Cápsula** elipsoide, con quillas longitudinales prominentes; cuerpo 30-32 x 14-18 mm; pedicelo 17 mm de largo; cuello apical, 12 mm de largo.

Epiphytic, lithophytic or rarely terrestrial, occasionally myrmecophilous, sympodial, caespitose **herb. Roots** basal, thin. **Stems** simple, cane-like, terete, thin, erect, straight, covered at the base by tubular, non-foliaceous, scarious sheaths, becoming fibrous with time. **Leaves** 6-10, distributed along the apical half of the stem, distichous, suberect, articulate; sheath tubular, minutely striated; blade oblong to oblong-elliptic, apex obtuse, slightly bilobed, coriaceous, margin entire, spreading. **Inflorescence** apical, elongate, racemose, erect (producing an additional raceme near the apex of the peduncle when the initial raceme has finished flowering), many-flowered; peduncle elongate, terete, thin, erect, slightly sinuous, covered nearly totally by 6-7 tubular, subacute, minutely striated, scarious bracts; rachis short. **Flowers** 6-30, simultaneous, resupinate, reddish orange, apex of the column, calli and keel yellow. **Floral bracts** much shorter than the ovary, linear-triangular, acuminate. **Ovary** terete, thin, not inflated, smooth, somewhat arching, reddish orange. **Sepals** free, short-acuminate, 7-veined, margin entire, spreading, the dorsal sepal reflexed, narrowly oblanceolate, the lateral sepals spreading, oblong, very oblique. **Petals** spreading, free, oblong, short-acuminate, 5-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base truncate, margin dentate; bicallose, the calli prominent, laminar, slightly divaricate; disc provided with a laminar, thin, sigmoid, mid keel which reaches the apical sinus; lateral lobes dolabriform; midlobe with a basal, subquadrate, isthmus, apex flabellate, apiculate. **Column** thin, straight, the apex slightly upturned, with a pair of deltoid appendices. **Clinandrium-hood** short, entire, margin slightly dentate. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles like a pile of roof-tiles, slightly longer than the pollinia. **Nectary** penetrating ¼ of the ovary, thin not inflated, minutely papillose. **Capsule** ellipsoid, with prominent longitudinal keels; pedicel and apical neck thin.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging along the Caribbean watershed lowlands of Honduras, Nicaragua, Costa Rica and the Pacific lowlands of Colombia and Ecuador. Epiphytic, lithophytic and rarely terrestrial, occasionally myrmecophilous, from sea level to 1000 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum baumannianum* belongs to the Schistochilum Group, Calanthum subgroup and Flexuosum complex, characterized by the caespitose habit, numerous oblong, coriaceous leaves, usually elongate peduncle of the inflorescence with a short raceme of flowers, bicallose lip and caudicles of the pollinia, like a pile of roof-tiles. The species is recognized by the resupinate, reddish orange flowers, the column, calli and keel yellow, sepals acuminate, 12.5-25 mm long, oblong, oblique petals with entire margin (very similar to the lateral sepals), 12-24 mm long, the column with a pair of apical, deltoid, appendices, the lip 3-lobed with a dentate margin. *Epidendrum hawkesii* Heller has been considered by many authors a synonym of *E. baumannianum*, they are vegetatively very similar, but the former has oblanceolate, acute sepals, narrowly rhombic petals unguiculate at the base and the apical margin erose-dentate. *Epidendrum apatotylosum* Hagsater has taller plants, up to 150 cm high, non-resupinate, purplish red flowers with the distal part of the column white, and a pair of truncate, laminar, appendices at the apex of the column are easily confused with calli, the 3-lobed lip has a dentate-fimbriate margin. *Epidendrum radicans* Pav. ex Lindl. has a creeping habit, with roots all along the ítem, orange reddish flowers, the disc of the lip yellow with a few red dots, sepals and petals are generally spreading, elliptic and acute, the margin entire.



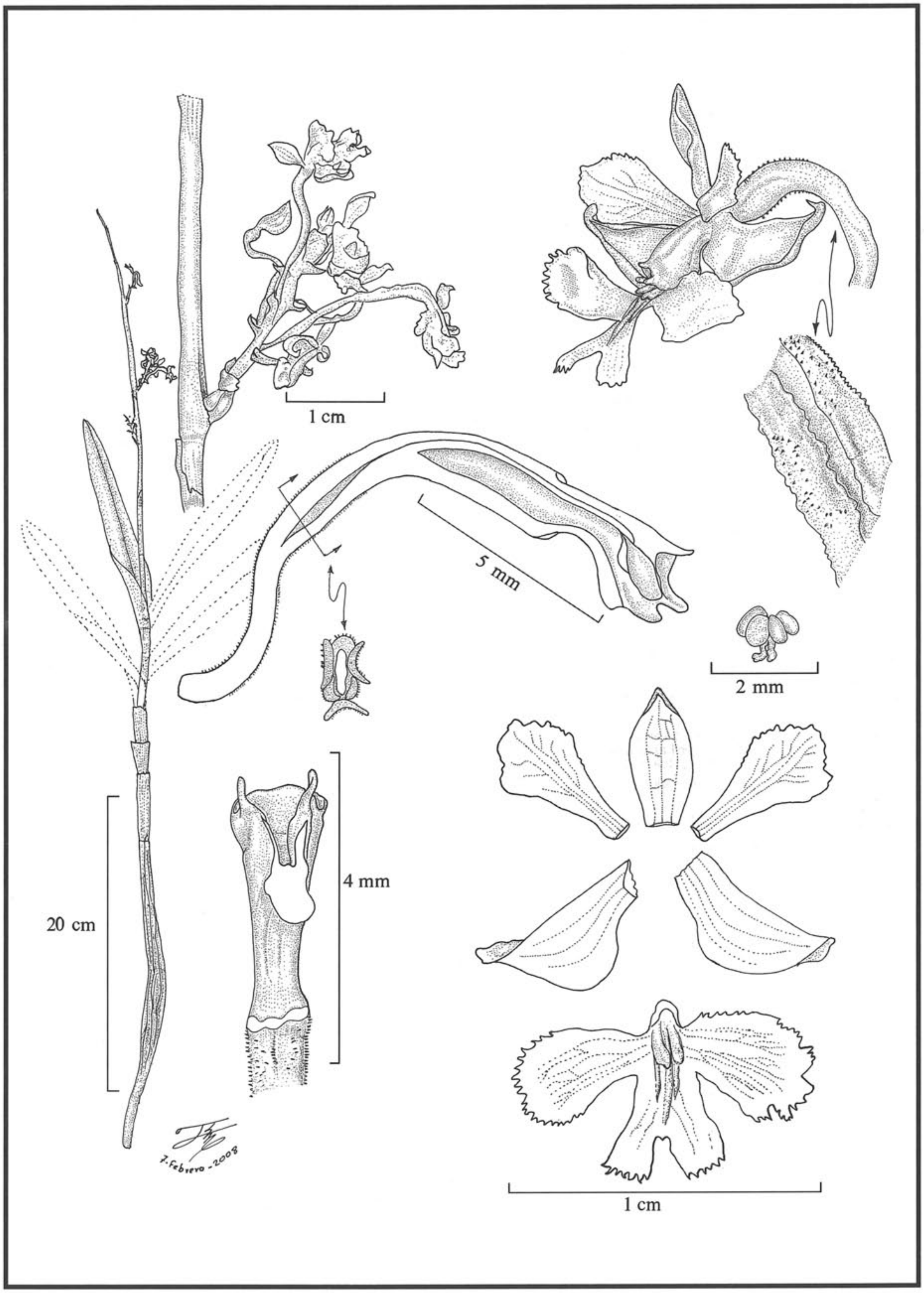
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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Mr. P. Baumann, who supplied Schlechter with the Madero herbarium collection, of which the Holotype was part.

REFERENCES: Dodson, C. H & P. M. Dodson, in C. H. Dodson, 1980, *Epidendrum baumannianum*, **Icon. Pl. Trop.** 1: 074; Dodson C. H., 2001, **Native Ecuadorian Orchids**, 2: p. 274-275; Hamer F., 2001. *Orchidaceae* Juss., in Stevens, W. D., et al., *eds*., **Flora de Nicaragua** 85(2): 1679. Missouri Botanical Garden Press, St. Louis, Missouri, U.S.A.; Misas, G., 2005, **Orquídeas de la Serranía del Baudó, Chocó-Colombia,** Corporación Capitalina de Orquideología, Bogotá, Colombia, p. 160-161.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM BLEPHARISTES Barker ex Lindl. **Plate 1105**

EPIDENDRUM BLEPHARISTES Barker ex Lindl., Bot. Reg. 30: Misc. p. 20. 1844.

Type: [VENEZUELA*]: La Guayra, ***J. Linden s.n.*** Holotype: K-L! (in part, illustration of flower; mounted with *Funck & Schlim 1436*), tracing at W 5820!

Synonyms: *Epidendrum funckii* Rchb.f., (as *E. funkii*) Linnaea 22: 839. 1849. Type: [COLOMBIA:] Pamplona, 7500 ft, I 1847, ***N. Funck & L. J. Schlim 1436***. Lectotype (here designated): W 9305! (illustration voucher). Isolectotypes: G! K-L! tracing at W 5820! LE! P! W 50197! Fragment from K-L, with illustration of flower: AMES 67801!

Epidendrum brachycladium Lindl., Fol. Orch. Epidendrum 60. no. 186. 1853. Type: PERU: Huanuco, ***Mc Lean s.n.*** Holotype: K! Isotype: K!

Epidendrum brachycladium Lindl. var. *ß crassipes* Lindl., Fol. Orch. Epidendrum 60, no. 186. 1853. Type: COLOMBIA: San Miguel Nevada de Santa Martha, ***Purdie s.n.*** Holotype: K! Isotype: K! several flowers, W 50200!

Epidendrum crassipes (Lindl.) Kränzl., Engl. Bot. Jahrb. 54, Beibl. 117: 25. 1916.

Epidendrum crassipes (Lindl.) Schltr. Repert. Spec. Nov. Regni Veg. Beih. 6: 69. 1919.

Epidendrum dolabrilobum Ames & C. Schweinf., Schedul. Orchid. 8: 43. 1925. Type: COSTA RICA: Las Concavas, 23 February 1924, ***C. H. Lankester 769***. Holotype: AMES 28295!

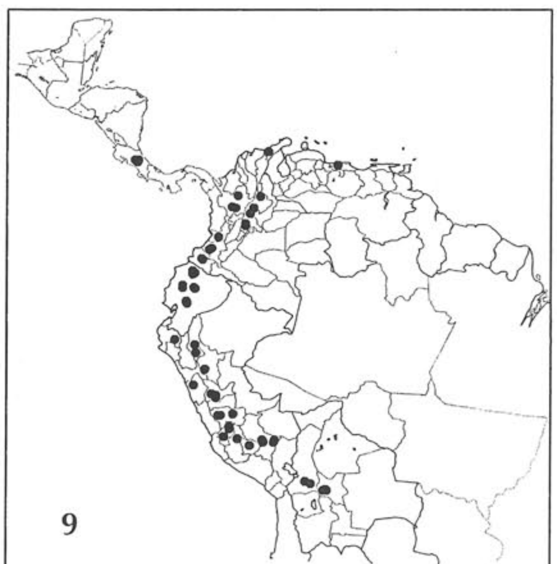
Hierba epífita, terrestre o litófita, mirmecófila, simpodial, cespitosa, de 32-120 cm de alto. **Raíces** basales, carnosas, delgadas, blancas, 1.0-1.5 mm de grosor. **Tallos** sencillos, formando un seudobulbo delgado y fusiforme cerca de la base, tipo caña y lateralmente aplanados en la porción foliar, de color rojo amoratado, erectos, rectos, 13-60 x 0.65-1.2 cm. **Hojas** 4-10, distribuidas en la mitad apical del tallo, articuladas, dísticas, suberectas; vaina tubular, finamente estriada, escariosa y fibrosa con el tiempo, 10-70 mm de largo; lámina linear oblonga, ápice obtuso, diminutamente apiculado, coriácea, margen entero, 4-18 x 0.8-1.5 [2.0-3.0] cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, erecta, generalmente pluriflora, 17-40 cm de largo; produciendo generalmente de 5-12 racimos, suberectos, dísticos, paucifloros, laxos, (que en ocasiones se bifurcan en la base produciendo a su vez un racimo semejante), 1.5-3.5 cm de largo; pedúnculo terete, delgado, 17-28 cm de largo; cubierto casi en su totalidad por 2-10 brácteas, tubulares, agudas, ligeramente imbricadas, decrecientes en tamaño, escariosas y fibrosas con el tiempo, 25-65 mm de largo; raquis terete, delgado, 2-12.5 cm de largo. **Brácteas florales** mucho más cortas que el ovario, triangular ovadas, agudas, abrazadoras, 2-6 mm de largo. **Flores** 40-60, sucesivas (aunque varias abiertas de manera simultánea), resupinadas, de color blanco a lila rosadas con los callos amarillo intenso; fragancia ligera. **Ovario** subtriquetro, trisulcado, delgado, ligeramente dilatado detrás del perianto, diminutamente papiloso, 16-30 mm de largo. **Sépalos** ligeramente pubescentes en la superficie dorsal, margen entero, extendido, 5-8 x 2.5-4 mm; el dorsal libre, extendido a ligeramente reflexo, oblongo obovado, subagudo, diminutamente apiculado, 3-nervado; los laterales unidos de manera oblicua a la base de la columna, cóncavos, angostamente obovados, apiculados, 4-nervados, oblicuos. **Pétalos** libres, extendidos, cuneado espatulados, redondeados, 3-nervados, las nervaduras laterales cortamente ramificadas hacia la mitad apical, margen eroso-denticulado en la mitad apical, extendido, 5-7 x 2.5-3 mm. **Labelo** unido a la columna, trilobado, base ligeramente cordada, algo convexo, margen apical de cada lóbulo, profundamente dentado, 4-8 x 9-15 mm; bicalloso, los callos prominentes, laminares, divaricados; disco unicarinado, la carina intercallosa, alargada hasta el seno apical; lóbulos laterales extendidos, oblongo dolabriformes, oblicuos, 4-6 x 3-5 mm; lóbulo medio cuneado, retuso, bilobado, casi tan largo como los lóbulos laterales, 2.5-5 x 2-4 mm. **Columna** delgada, ligeramente arqueada, con un par de dientes apicales prominentes, 4 mm de largo. **Clinandrio** corto, margen subentero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas del doble del largo de los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando mas de la mitad de la cavidad estigmática. **Nectario** poco profundo, penetrando 1/3 del ovario. **Cápsula** angostamente elipsoide a suborbicular, con el perianto persistente, cuerpo 12-30 x 9-13 mm; pedicelo 9-13.5 mm de largo; cuello apical 7-8.5 mm de largo.

Epiphytic, terrestrial or lithophytic, myrmecophilous, simpodial, caespitose **herb. Roots** basal, fleshy, thin. **Stems** simple, forming a thin, fusiform pseudobulb near the base, cane-like, laterally compressed at the foliar portion, often reddish purple, erect straight. **Leaves** 4-10, distributed along the apical half of the stem, articulate, distichous, suberect; sheath tubular, minutely striated, scarious and becoming fibrous with time; blade linear-oblong, coriaceous, apex obtuse, minutely apiculate, margin entire. **Inflorescence** apical, paniculate, erect, generally many-flowered; generally producing 5-12 suberect, distichous, lax, few-flowered racemes; peduncle terete, thin, long, nearly totally covered by 2-10 tubular, acute, slightly imbricating bracts, decreasing in size, scarious and becoming fibrous with time; rachis terete, thin. **Floral bracts** much shorter than the ovary, triangular-ovate, acute. **Flowers** 40-60, successive, though several may be open simultaneously, resupinate, white to lilac-pink, with deep yellow calli; fragrance weak. **Ovary** subtriquetrous, trisulcate, thin, slightly dilated behind the perianth, minutely papillose. **Sepals** slightly pubescent on the dorsal surface, margin entire, spreading; the dorsal sepal free, spreading to slightly reflexed, oblong-obovate, subacute, minutely apiculate, 3-veined; the lateral sepals obliquely united to the base of the column, concave, narrowly obovate, apiculate, 4-veined, oblique. **Petals** free, spreading, cuneate-spatulate, rounded, 3-veined, the lateral veins short-branched, along the apical half, apical margin erose-denticulate, spreading. **Lip** united to the column, 3-lobed, somewhat convex, the base slightly cordate, apical margin of the lobes deeply dentate; bicallose, the calli prominent, laminar, divaricate; disc 1-keeled, the keel running from in between the calli to the apical sinus; lateral lobes spreading, oblong-dolabriform, oblique; midlobe cuneate, retuse, bilobed, nearly as long as the lateral lobes. **Column** thin, slightly arching, with a pair of prominent apical teeth. **Clinandrium-hood** short, margin subentire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** subapical, slit. **Nectary** shallow, penetrating 1/3 of the ovary. **Capsule** narrowly ellipsoid to suborbicular, with the perianth persistent, pedicel thin.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Highly localized in central Costa Rica, widespread, in the Andes of South America from Colombia to Bolivia, Epiphytic and myrmecophilous in Costa Rica, as well as in South America, where it is also terrestrial or lithophytic and then not myrmecophilous; growing at 1200-2500 m, rarely to 3000 m, mainly in Peru. Flowering throughout the year.

RECOGNITION: *Epidendrum blepharistes* belongs to the Schistochilum Group, Blepharistes subgroup, characterized by the base of the stems thickened, forming fusiform pseudobulbs, narrow, linear-lanceolate to linear-oblong leaves, an elongate inflorescence with few-flowered racemes of lilac-pink to white flowers. The species is recognized by the plants which are up to 120 cm tall, with 4-10 linear-oblong leaves, small creamy white or lilac-pink flowers (sepals 5-8 mm long), cuneate-spatulate petals with the margin erose-denticulate, the apical margin of the lobes of the lip deeply dentate. *Epidendrum polystachyum* Kunth is vegetatively very similar, but the plants are apically bi- and trifoliate, the flowers yellowish, the petals acuminate with the margin slightly dentate, and the lateral lobes of the lip subquadrate, with the margin minutely dentate and the midlobe very small, only slightly bilobed. *Epidendrum pseudopolystachyum* D.E.Benn. & Christenson has short plants, to 22 cm tall, bifoliate with oblong-elliptic leaves and greenish flowers, the petals and the lip with entire margins. *Epidendrum flexuosum* G.Mey. has somewhat similar, narrow leaves, but the stems are not thickened-fusiform, the flowers are larger, (sepals 15-19 mm long), lilac-pink to magenta, and the lip is entire, oblong-rectangular. Other species in Mesoamerica like *Epidendrum radicans* Pavón ex Lindl., *Epidendrum apatotylosum* Hágsater, *Epidendrum baumannianum* Schltr. and *Epidendrum hawkesii* Heller are vegetatively and florally very different, with elliptic leaves, and larger, reddish orange flowers.



*NOTE: La Guayra is the port of Caracas, from which the Linden expedition embarked to Rio Hacha and climbed the Nevado de Santa Marta in 1844, at the end of the 3rd expedition, and before returning to Europe. No other specimen of this species has been confirmed from Venezuela (G. Carnevali, pers. comm.). We are therefore suspicious of the locality reported by Lindley.

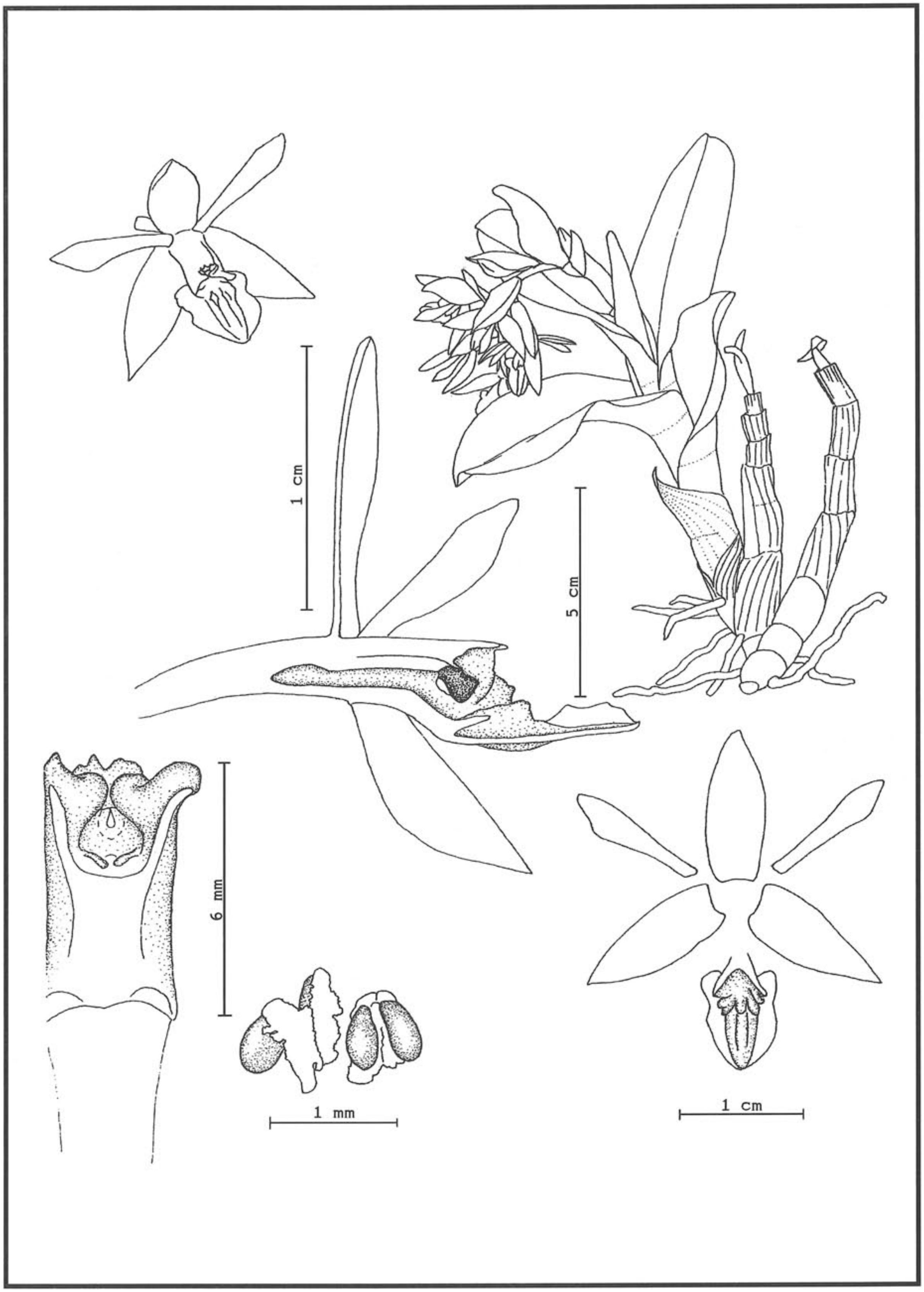
CONSERVATION STATUS: NT. Widespread and common in South America. It appears to be highly localized and rare in Costa Rica.

ETYMOLOGY: From the Greek βλεφαρις, eyelash, probably in reference to the appearance of the dentate margin of the lip.

REFERENCES: Bennett D. E., Jr. & E. A. Christenson, in E. A. Christenson, 1993, *Epidendrum funckii* Rchb.f., **Icon. Orch. Peruv.**: 46; Christenson, E. A., 2003, *E. funckii* in **Machu Picchu: Orquídeas**, PROFONANPE: p. 57; Collantes, B., C. Soto & J. Koechlin, 2007, **Orchids-Orquídeas en Inkaterra at Machu Picchu, Pueblo Hotel**, Inkaterra Asociación, p. 118, photo 29; Dodson, C. H. & P. Marmol, in C. H. Dodson, 1980, *Epidendrum funckii* Rchb.f., **Icon. Pl. Trop.** (Orchids of Ecuador): pl. 378; Foldats, E., 1970, **Flora de Venezuela (Orchidaceae): 15(3)**: 182; Løjtnant, B., 1977, *Epidendrum in Ecuador,* **Bot. Notiser** 130: 324; Schweinfurth, C., 1959, **Orchids of Peru**: 447.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM BRACTEOSUM Ames & C.Schweinf.

Plate 1106

EPIDENDRUM BRACTEOSUM Ames & C.Schweinf., Schedul. Orchid. 10: 59. 1930.

Type: COSTA RICA: San José: Cerro de las Vueltas, 29 December 1925-1 January 1926, 2700-3000 m, ***Paul C. Standley & Juvenal Valerio 43663***. Holotype: AMES 33498!

Hierba epífita, simpodial, cespitosa, de 8.5-15 [23] cm de alto incluyendo la inflorescencia. **Raíces** de la base de los tallos, delgadas, blancas, 0.5-2 mm de grosor. **Tallos** sencillos, tipo caña, algo lateralmente aplanados, delgados en la base y ligeramente engrosados hacia el ápice, erectos a ligeramente arqueados, 3-9 x 0.3-0.8 cm, cubiertos en la parte inferior por vainas (no foliares) anchamente ovadas, agudas, amplexicaules, conduplicadas, parcialmente imbricadas, membranáceas, escariosas y fibrosas con el tiempo, 1-2.4 x 0.7-1.7 cm. **Hojas** 3-4, distribuidas en la mitad apical del tallo, articuladas, alternas, ascendentes a subextendidas, desiguales en tamaño (la inferior marcadamente más corta); vaina tubular, lateralmente aplanada, 7-20 x 4-15 mm; lámina elíptica a ovada, ápice redondeado, diminutamente apiculado, coriácea, de color verde oscuro con el envés y el margen ligeramente amoratado, 1.7-9.5 x 1.2-2.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, pauciflora, arqueada, 3.5-5 [13] cm de largo; pedúnculo delgado, ancipitoso, recto, corto, 1.6-2.5 cm de largo; provisto cerca de la base de una bráctea tubular, conduplicada, subaguda, algo ancipitosa, 18-45 x 6-10 mm; raquis delgado, recto. **Brácteas florales** prominentes, más largas que el ovario, cimbiformes, agudas, abrazadoras, espaciadas, de color verde claro con el envés ligeramente teñido de púrpura, la inferior larga y las superiores progresivamente más cortas, 9-45 x 3-8 mm (ancho de la bráctea sin extenderse). **Flores** 3-6 [9], simultáneas, resupinadas, de color verde pálido ligeramente teñidas de cobrizo; sin fragancia. **Ovario** terete, liso, no inflado, 10-12 mm de largo. **Sépalos** entreabiertos, libres, carnosos, glabros, margen entero, 9-12 x 4-5 mm; el **dorsal** elíptico lanceolado, subagudo, 5-nervado; los **laterales** oblicuamente lanceolados, cortamente acuminados, con una quilla dorsal diminuta, 4-nervados. **Pétalos** parcialmente extendidos, libres, angostamente espatulado oblanceolados, subagudos, 1-nervados, margen entero, 9-11 x 2.3-3 mm. **Labelo** unido a la columna, entero, pandurado cordado y auriculado en la base, redondeado en el ápice, casi tan largo como ancho, margen entero, 7-8 x 6-6.6 mm; tricalloso, los callos prominentes, laminares, cortos (el par lateral claramente bidentado), prolongándose en 3 quillas delgadas que se fusionan en la parte media de la lámina formando una sola quilla carnosa y ancha alargada hasta el ápice del labelo; disco tetracuniculado (cada uno de los cunículos ubicado en ambos lados de cada callo), con un par de engrosamientos laminares ocultos debajo de los callos laterales. **Columna** corta, recta, dilatada hacia el ápice, con dos alas prominentes y redondeadas a los lados debajo de la antera, 5-6 mm de largo. **Clinandrio** prominente, sobrepasando ligeramente el cuerpo de la columna, margen irregularmente dentado. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más largas que los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/3 del largo de la cavidad estigmática. **Nectario** penetrando poco menos de 1/3 del ovario, dilatado ligeramente hacia la base, liso. **Cápsula** no vista.

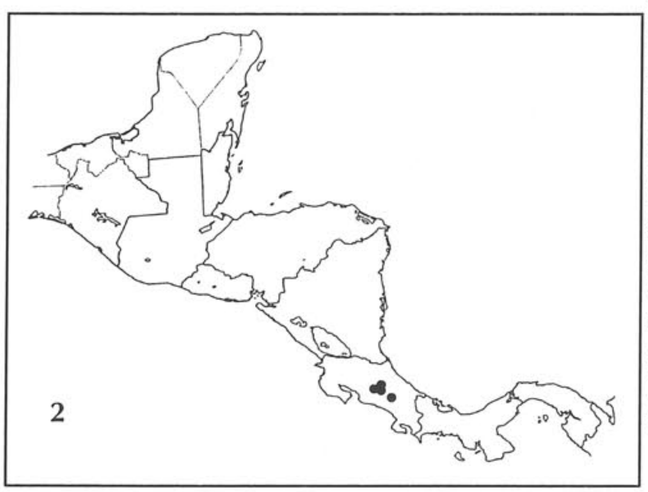
Epiphytic, sympodial, caespitose **herb. Roots** basal, thin. **Stems** simple, cane-like, short, thick, laterally compressed, straight, the lower portion covered by non-foliaceous, scarious, membranaceous sheaths. **Leaves** 3-4, distributed throughout the apical half of the stem, the lower one shorter; sheath tubular; blade elliptic to ovate, apex rounded, minutely apiculate, coriaceous, dark green with purple, margin entire. **Inflorescence** apical, racemose, arching, flowering only once; peduncle thin, ancipitose, straight, provided near the base with a basally tubular, apically conduplicate, narrowly triangular-ovate, subacute, somewhat ancipitose bract; rachis thin, ancipitose, straight. **Floral bracts** conspicuous, longer than the ovaries, conduplicate, cymbiform, acute, the lower one long, the upper ones progressively shorter. **Flowers** 3-6[9], simultaneous, resupinate, pale green, slightly tinged copper, non-fragrant. **Ovary** terete, smooth. **Sepals** partly spreading, free, fleshy; the dorsal lanceolate-elliptic, subacute, 5-veined, the **laterals** obliquely lanceolate, short acuminate, 4-veined, with a dorsal keel. **Petals** spreading, free, narrowly spathulate-oblanceolate, subacute 1-veined. **Lip** pandurate-cordate, auriculate, obtuse; tricallose (the lateral calli bidentate), prolonged into 3 parallel keels which fuse into one before the apex, forming a wide, low, fleshy keel that ends at the apex of the lip; disc 4-cuniculate, each beside the calli. **Column** short, straight, dilated towards the apex, with a pair of prominent, rounded wings on the sides. **Clinandrium-hood** prominent, margin erose-dentate, without surpassing the body of the column. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** subapical, slit. **Nectary** penetrating somewhat less than 1/3 of the ovary, slightly dilated at the base, smooth.

OTHER SPECIMENS: COSTA RICA: **San José**: P.N. Chirripó, Sabana Los Leones, 3300 m, 30 I 2002, *Alfaro 3864*, INB! La Georgina, 18 IX 1984, *Dressler & Biología 5*, USJ! Near Villa Mills, ca. 2800 m, 15 IX 1961, *Weber 6246* AMES! **Cartago**: Cordillera de Talamanca, Cerro Cuericí, Parque Nacional Chirripó, 3200 m, 16 IX 1983, *Davidse 24768*, CR! AMO x2! MO x2!

OTHER RECORDS: COSTA RICA: **San José**: Cerro de la Muerte, 3150 m, 4 VII 1981, *Hágsater 6375*, slide and flower in spirit, AMO! (Illustration voucher).

DISTRIBUTION AND ECOLOGY: Endemic from the western Cordillera de Talamanca in Costa Rica; epiphytic between mosses at the base of tree-trunks, in oak and elfin forest, 2700-3300 m. Flowering from July to September, January.

RECOGNITION: *Epidendrum bracteosum* belongs to the Bracteosum Group which is characterized by the sympodial, caespitose habit with laterally compressed, ancipitose, few-leaved stems covered by tubular, scarious sheaths, a racemose to paniculate, 3-11-flowered, arching inflorescence with prominent, acute floral bracts, the floral segments partly spreading, lip entire, generally auriculate at the base, the disc tricarinate and 4-cuniculate (on each side of the calli), and with fleshy-laminar thickenings beneath the calli; Bracteosum Subgroup which has 3-5 leaves distributed along the apical half of the stem, the inflorescence racemose to paniculate with the peduncle covered by 1 prominent and persistent bract and the floral bracts cymbiform. The species has short plants to 23 cm tall, the sepals 9-12 mm long, petals spatulate oblanceolate, 1-veined, and the panduriform-cordate lip, 7-8 mm long. It is very similar to *Epidendrum davidsei* Hágsater which is larger overall, the plants to 37-50 cm tall, sepals 12-15 mm long, petals elliptic, 3-veined, and the lip 9.2-12 mm long. *Epidendrum pitalense* Salazar, Hágsater & Linares, of the Pallens Subgroup, has 1-2-leaved stems, the leaves aggregate towards the apex, the inflorescence longer than the apical leaf, floral bracts tubular, flowers purple-brown, the column green, sepals 14-17 mm long, and the petals narrowly elliptic.

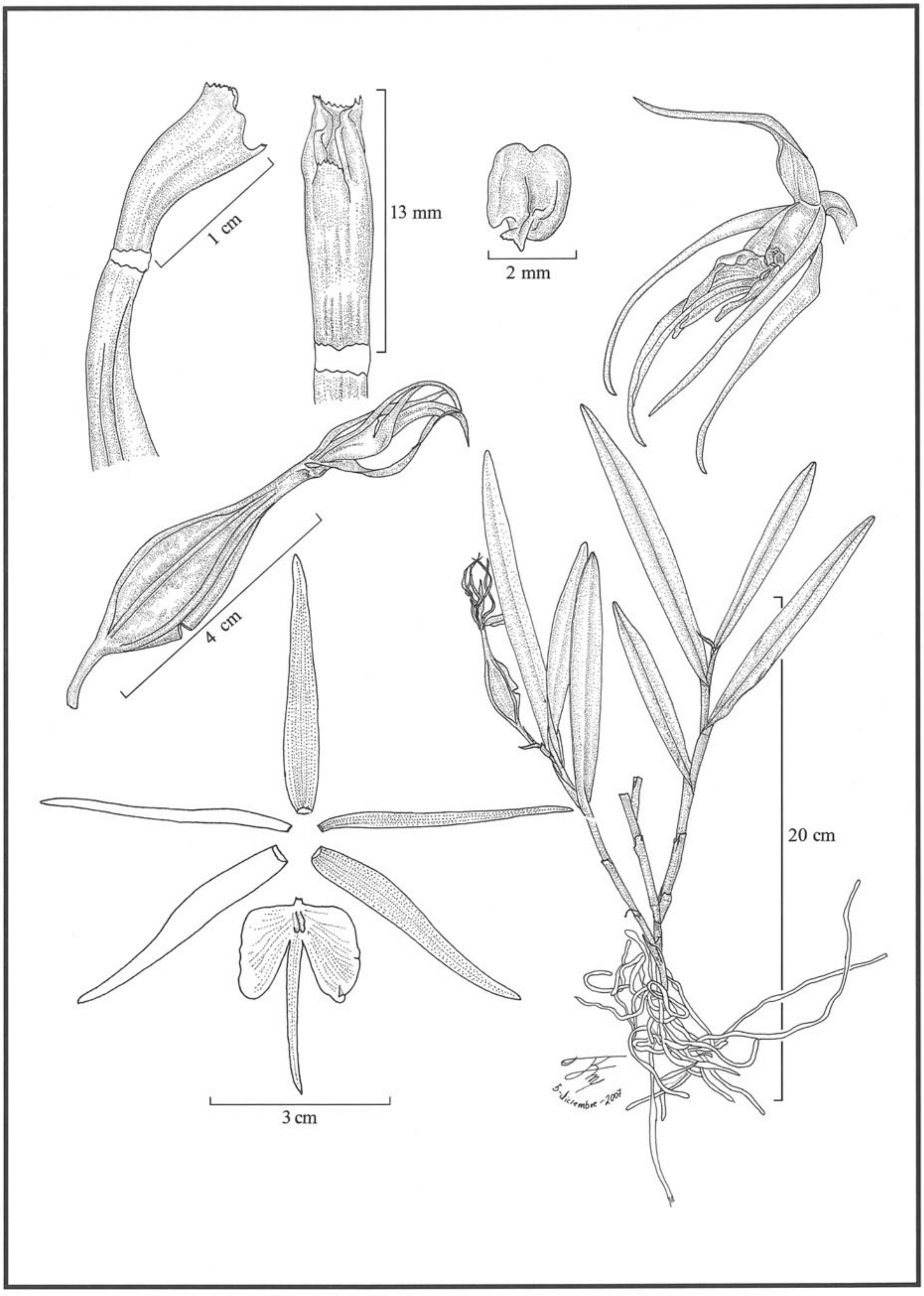


2

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *bractea*, a floral leaf, a modified leaf from the axil of which a flower arises, in reference to the prominent, conduplicate floral bracts characteristic of this species.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM BUENAVENTURAE F.Lehm. & Kraenzl. **Plate 1107**

EPIDENDRUM BUENAVENTURAE F.Lehm. & Kraenzl. Engler Bot. Jahrb. 26: 470. 1899.

Type: COLOMBIA: In silvis densis ad fluvium Rio Dagua, in ditione silvarum oppidi Buenaventura, 0-500 m, ***F. C. Lehmann 8313.*** Holotype: B (destroyed). Lectotype (here designated): AMES 22583! Isolectotypes: AMES 10328! AMES 10327! G! L! NY! W 6536!

Epidendrum nocturnum Jacq. var. *panamense* Schltr. Repert. Spec. Nov. Regni Veg. Beih. 17: 36. 1922. Type: PANAMA: Gatun-See, ungefähr in Seehöhe, ***C. W. Powell 35.*** Holotype B (destroyed). Lectotype: (designed by Christenson, 1991) AMES 23803! Isolectotype: K! MO 955904!

Hierba epífita o litófita, simpodial, cespitosa, 17-30 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, 0.7-2.5 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, 8.0-22.0 x 0.2-0.45 cm. **Hojas** 3-7, distribuidas en la mitad apical del tallo, coriáceas; vaina foliar tubular, lateralmente comprimida, 1.5-2.0 cm de largo; lámina elíptico lanceolada, bilobada, carina dorsal evidente, verde en el haz y rojo morado por el envés, 4.0-14.0 x 0.8-2.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa a pluriracemosa, produce una flor a la vez y florece durante varios años. **Bráctea floral** mucho más corta que el ovario, triangular, aguda, 3.5-6.5 x 2.0-3.0 mm. **Ovario** terete, no inflado, no ornamentado, 35-50 x 1.2-1.5 mm. **Flores** una a la vez, si hay dos, producidas de diferentes racimos, sucesivas, resupinadas, sépalos y pétalos café verdosos a verde amarillentos, labelo y columna blanco, lóbulo medio del labelo raramente con la mitad apical amarillo, los callos amarillos, fragancia ligera. **Sépalos** extendidos, angostamente elíptico lanceolados, acuminados, con 9-nervaduras principales de las cuales se originas varias más dando la apariencia de tener 12 o más nervaduras, margen entero, revoluto, 25-46 x 1.8-3 mm. **Pétalos** extendidos, linear lanceolados, acuminados, 5-nervados con algunas nervaduras secundarias dando la apariencia de ser 7-9 nervados, margen entero, revoluto, 27-45 x 1.0-1.5 mm. **Labelo** unido a la columna, trilobado, base cordada, margen entero, extendido, 20-40 x 10-15 mm; bicalloso, los callos laminares, prominentes, divergentes; unicarinado, la carina baja, la cual se prolonga hasta el ápice del lóbulo medio; lóbulos laterales oblicuos ovado triangulares, acuminados, agudos a redondeados con numerosas venas engrosadas cuando secos, 16-25 x 6-8 mm; lóbulo medio linear lanceolado, acuminado, 23-45 x 0.8-1.7 mm. **Columna** recta a arqueada, dilatada hacia el ápice, 9-17 x 2.5-3.8 mm. **Clinandrio** prominente, el margen dentado fimbriado. **Antera** ovoidea, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** reducidos. **Nectario** penetrando 1/2 del ovario, delgado, liso. **Cápsula** elipsoide, pequeña; pedicelo de 10-15 x 0.8-1 mm, cuerpo 18-30 x 5.0-11 mm, ocupa alrededor de 1/2 de la longitud total y se localiza en la mitad, cuello apical 9.0-15 x 1.0-1.7 mm.

Epiphytic or lithophytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, laterally compressed. **Leaves** 3-7, distributed throughout the apical half of the stem, coriaceous; sheath tubular, laterally compressed; blade elliptic-lanceolate, bilobed, dorsally carinate, the upper side green, the backside red-purple, about 5-6 times longer than broad. **Inflorescence** apical, racemose to pluriracemose, producing one flower at a time and during several years. **Floral bract** much shorter than the ovary, triangular, acute. **Ovary** terete, not inflated, smooth. **Flowers** one at a time, sometimes two from different racemes, successive, resupinate, sepals and petals greenish-brown to yellowish green, lip and column white, the apical half of the midlobe rarely yellow, calli yellow; with a slight fragrance. **Sepals** spreading, narrowly elliptic-lanceolate, acuminate, with 9 main veins, some branched so as to appear 12-veined, margin entire-revolute. **Petals** spreading, linear-lanceolate, acuminate, 5-veined, time several secondary veins so as to appear 7-9-veined, margin entire, revolute. **Lip** united to the column, 3-lobed, base cordate, margin entire, revolute; bicallose, the calli laminar, prominent, divergent, one-keeled, the keel low, prolonged to the apex of the midlobe; lateral lobes oblique, ovate-triangular, acuminate, acute to rounded with numerous thickened veins; midlobe linear-lanceolate, acuminate. **Column** straight to arching, dilated towards the apex. **Clinandrium-hood** prominent, margin dentate-fimbriate. **Anther** ovoid, 4-celled. **Pollinia** 4, obovate, laterally compressed; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** penetrating ½ of the ovary, thin, smooth. **Capsule** ellipsoid, small, body occupying about half the length and located in the middle.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging along the Pacific lowlands and coastal mangrove from Mexico (isthmus of Tehuantepec), Chiapas through Honduras, Nicaragua, Costa Rica and Panama to Colombia, epiphytic or lithophytic, usually at sea level (on Rhyzophora) or near sea level, to 1420 m altitude. Flowering throughout the year.

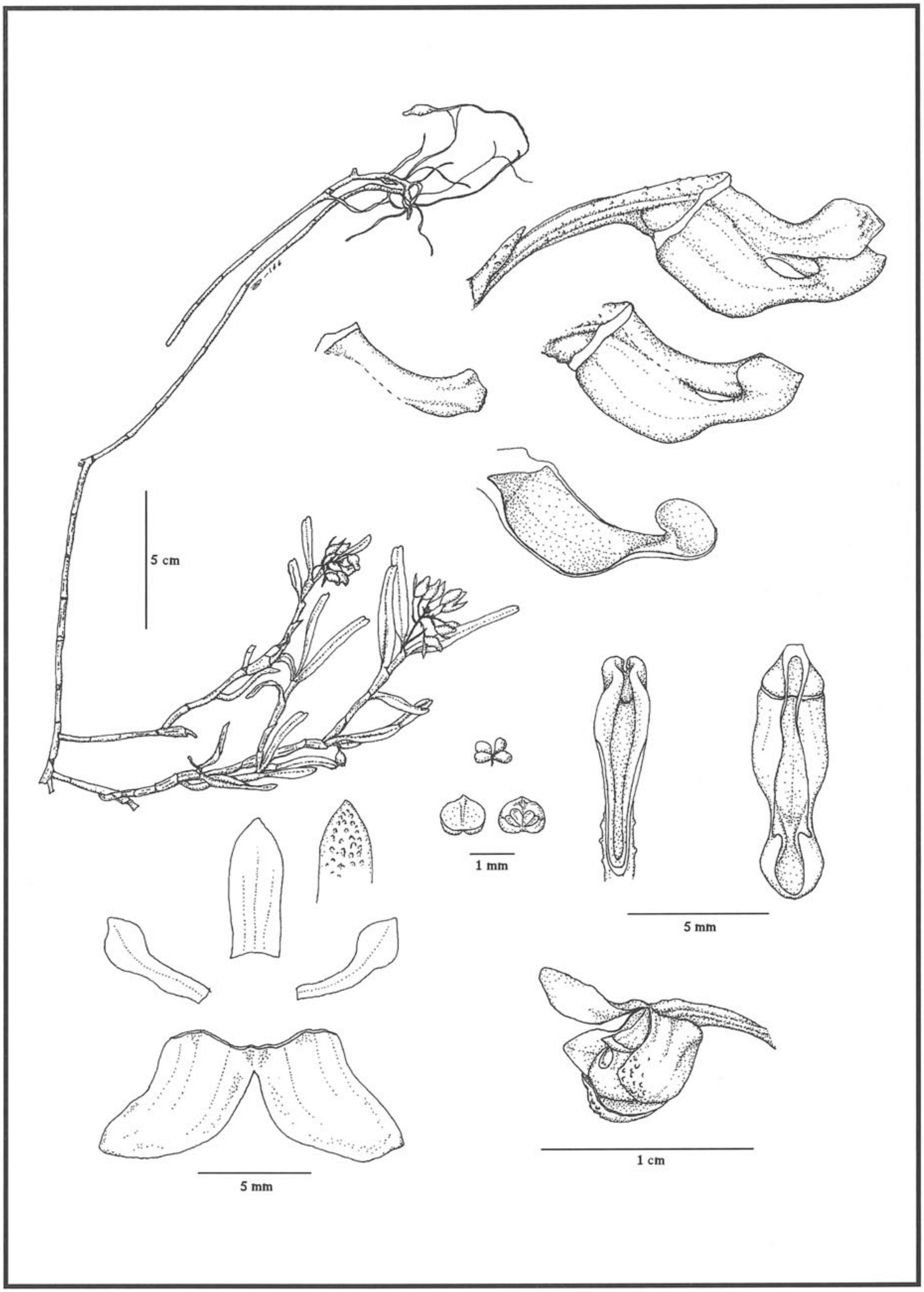
RECOGNITION: *Epidendrum buenaventurae* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, short, racemose or pluri-racemose inflorescence, without spathaceous bracts, usually large, star-shaped flowers, with similar sepals and petals, and the Nocturnum Subgroup which has cane-like stems, non-thickened towards the middle, and usually successive flowers; the flowers are mostly indistinguishable in shape. The species can be recognized by the laterally compressed stems, leaves green on the upper-side, purple on the back-side, sepals and petals greenish brown to yellowish green, lip and column white, the midlobe rarely with the apical half yellow, calli yellow; lip 3-lobed, the lateral lobes with numerous, thickened veins, short ovary (35-50 mm long), the body short, 20-30 mm long, about half as long as the ovary and in the middle. It is very similar to *Epidendrum nocturnum* Jacq. which is widely distributed, and has terete stems, the leaves green on both sides, and the body of the capsule occupying nearly the whole length of the ovary which is 45-62 mm long. *Epidendrum angustilobum* Fawc. & Rendle (syn: *Epidendrum latifolium* (Lindl.) Garay & Sweet) ranges widely in the Antilles, Colombia, Venezuela and the Guyanas, and is rare in Costa Rica and Panama, it has widely ancipitose stems, proportionately wide leaves (2-7 cm wide), green colored, and a long ovary (120-200 mm) with the short body of the capsule located above the middle. *Epidendrum mesocarpum* Hágsater grows at higher elevations (900-2000 m altitude) in southern Mexico, Guatemala, El Salvador, Honduras and Nicaragua, has widely ancipitose stems, dark green leaves, and a long ovary (120-160 mm), with the elongate body of the capsule located slightly above the middle of the ovary. *Epidendrum campyloglossum* P.Ortíz & Hágsater is endemic to the Pacific coast of Colombia near Buenaventura, has ancipitose stems, acute leaves, green on both sides, lateral lobes of the lip obovate, rounded and truncate, with the midlobe recurved in natural position.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the Colombian port city of Buenaventura, near which the type was collected.

REFERENCES: Christenson, E.A. 1991. **Mesoamerican Orchid Studies II: Powell's Panamanian Orchidaceae**, Lindleyana 6 (3): 124-132. Salazar, G. A. 1999. **Novelties in Mexican Orchidaceae, mainly from the Uxpanapa-Chimalapa region, Veracruz and Oaxaca.** Anales del Instituto de Biología. Universidad Nacional Autónoma de México. Serie Botánica 70(1):1-12.



EPIDENDRUM CARDIOEPICHILUM Hágsater, D.Trujillo & E.Santiago **Plate 1108**

EPIDENDRUM CARDIOEPICHILUM Hágsater, D.Trujillo *et* E.Santiago, *sp. nov.*

Type: PERU: Huanuco: Prov. Huanuco: Distrito Chinchao: San Pedro de Carpish, 2755 m, [18 Febrero 2007]. ***Delsy Trujillo 351***. (Illustration voucher). Holotype: URP! Isotypes (to be deposited): AMO! SEL! USM!

Epidendro globifloro F.Lehm. & Kraenzl. simile sed floribus brunneo-luteolis, columna basi geniculata et sursum arcuata, dimidio apicali libera, labello angusto, ad apicem expando laminam roseam late cordiformem concavam formanti et columnae apicem cingenti, recedit.

Hierba epífita, monopodial, de crecimiento sucesivo lateral, escasamente ramificada arriba, ca. 45 cm de alto. **Raíces** basales del tallo inicial, carnosas, delgadas. **Tallos** sucesivos, originándose de los entrenudos apicales del tallo anterior, tipo caña, teretes, delgados; el basal 16 x 0.3 cm; los subsecuentes 4-12 x 0.3-0.4 cm; cubiertos en la mitad basal por 2 vainas tubulares, no foliáceas, escariosas con el tiempo. **Hojas** 3-4, distribuidas en la mitad apical de los tallos, alternas, suberectas, subcoriáceas; vaina tubular, 11-15 x 3-4 mm; lámina oblongo lanceolada, ápice obtuso, bilobado, diminutamente apiculado, ligeramente recurvado, margen entero, extendido, 1.5-5.5 x 0.35-0.9 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, compacta, subesférica, arqueado-nutante, 2.5 cm de largo; pedúnculo terete, delgado, corto, desprovisto de brácteas, 11 mm de largo; raquis terete, delgado, 14 mm de largo. **Brácteas florales** pequeñas, de menos de la mitad del largo del ovario, triangular lanceoladas, agudas, abrazadoras, 2.7 mm de largo. **Flores** 8-15, simultáneas, resupinadas, pardo amarillentas, el ápice del labelo amoratado; fragancia suave, desagradable. **Ovario** terete, delgado, no inflado, el ápice cortamente dilatado hacia la base de los sépalos laterales, escasamente pustulado, 9 mm de largo. **Sépalos** redondeados, diminutamente apiculados, dorsalmente pustulados, 3-4-nervados, margen entero, extendido, 6-8 x 2.5-5.3 mm; el **dorsal** entreabierto, libre, oblongo elíptico, los **laterales** entrecerrados, unidos cortamente en la base, casi paralelos a la columna, ovado falcados, obtusos, oblicuos. **Pétalos** entrecerrados, margen inferior unido a la columna en la mitad basal, unguiculados, espatulados, la parte más ancha rómbica con los lados redondeados, el ápice obtuso, diminutamente apiculados, dorsalmente pustulados, 1-nervados, margen entero, extendido, 5.5-6.4 x 1.8-2 mm (en la parte más ancha). **Labelo** unido a la mitad basal de la columna y formando una cavidad amplia, desde la base de la columna, sacciforme en posición natural, con un pequeño par de dientes subagudos en el tercio apical, el ápice abruptamente expandido en una lámina cordiforme, abrazando parcialmente el ápice de la columna sin envolverla por completo, margen entero, involuto, 7.5-8.7 x 2.5-3 mm (ancho del labelo sin extenderse); ecalloso y desprovisto de quillas. **Columna** libre en la mitad apical, fuertemente arqueada hacia arriba, algo geniculada con respecto al ovario, sin alas, 7.0-7.5 mm de largo. **Clinandrio** corto, margen entero. **Antera** reniforme, con una quilla central en la superficie dorsal, 4-locular. **Polinios** 4, obovoides; caudículas más cortas que los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** corto, penetrando ligeramente el ovario justo detrás del perianto, amplio, no inflado, liso. **Cápsula** no vista.

Epiphytic, monopodial **herb,** with successive lateral growths and scarcely branching above. **Roots** from the base of the initial growth, fleshy, thin. **Stems** successive, originating from the apical internodes of the previous growth, cane-like, terete, thin, progressively shorter; the basal half covered by 2 tubular, non-foliaceous sheaths that become scarious with time. **Leaves** 3-4, distributed along the apical half of the stems, alternate, suberect, subcoriaceous; sheath tubular; blade oblong-lanceolate, apex obtuse, bilobed, minutely apiculate, slightly recurved, margin entire, spreading. **Inflorescence** apical, racemose, compact, subsphaerical, arching-nutant; peduncle terete, thin, short, without bracts; rachis terete, thin. **Floral bracts** small, less than half the length of the ovary, triangular-lanceolate, acute, amplexicaul. **Flowers** 8-15, simultaneous, resupinate, yellowish-brown, the apex of the lip pink, with the margin darker; fragrance weak, disagreeable. **Ovary** terete, thin, not inflated, the apex short dilated behind the base of the lateral sepals, scarcely postulate. **Sepals** round, minutely apiculate, dorsally postulate, 3-4-veined, margin entire, spreading; dorsal sepals partly spreading, free, oblong-elliptic, the lateral sepals mostly closed, short-united at the base, nearly parallel to the column, ovate-falcate, obtuse, oblique. **Petals** mostly closed, the basal half of the lower margin united to the column, unguiculate, spatulate, the widened apex rhombic, the sides rounded, the apex obtuse, minutely apiculate, dorsally postulate, 1-veined, margin entire, spreading. **Lip** united to the basal half of the column and forming a wide cavity from the base of the column, sac-like in natural position, with a pair of subacute teeth at the apical third, the apex abruptly expanded into a cordiform limb, embracing the apex of the column without covering it completely, margin entire, involute; ecallose and without keels. **Column** free along the apical half, strongly arched upwards, somewhat geniculate with respect to the ovary, without wings. **Clinandrium-hood** short, margin entire. **Anther** reniform, with a central keel on the dorsal surface, 4-celled. **Pollinia** 4, obovoid; caudicles shorter than the pollinia. **Rostellum** subapical, slit. **Nectary** short, barely penetrating the ovary just behind the perianth, wide, not inflated, smooth.

OTHER RECORDS: PERU: Huánuco: Carpish, *Trujillo 174*, xerox of illustration, AMO!

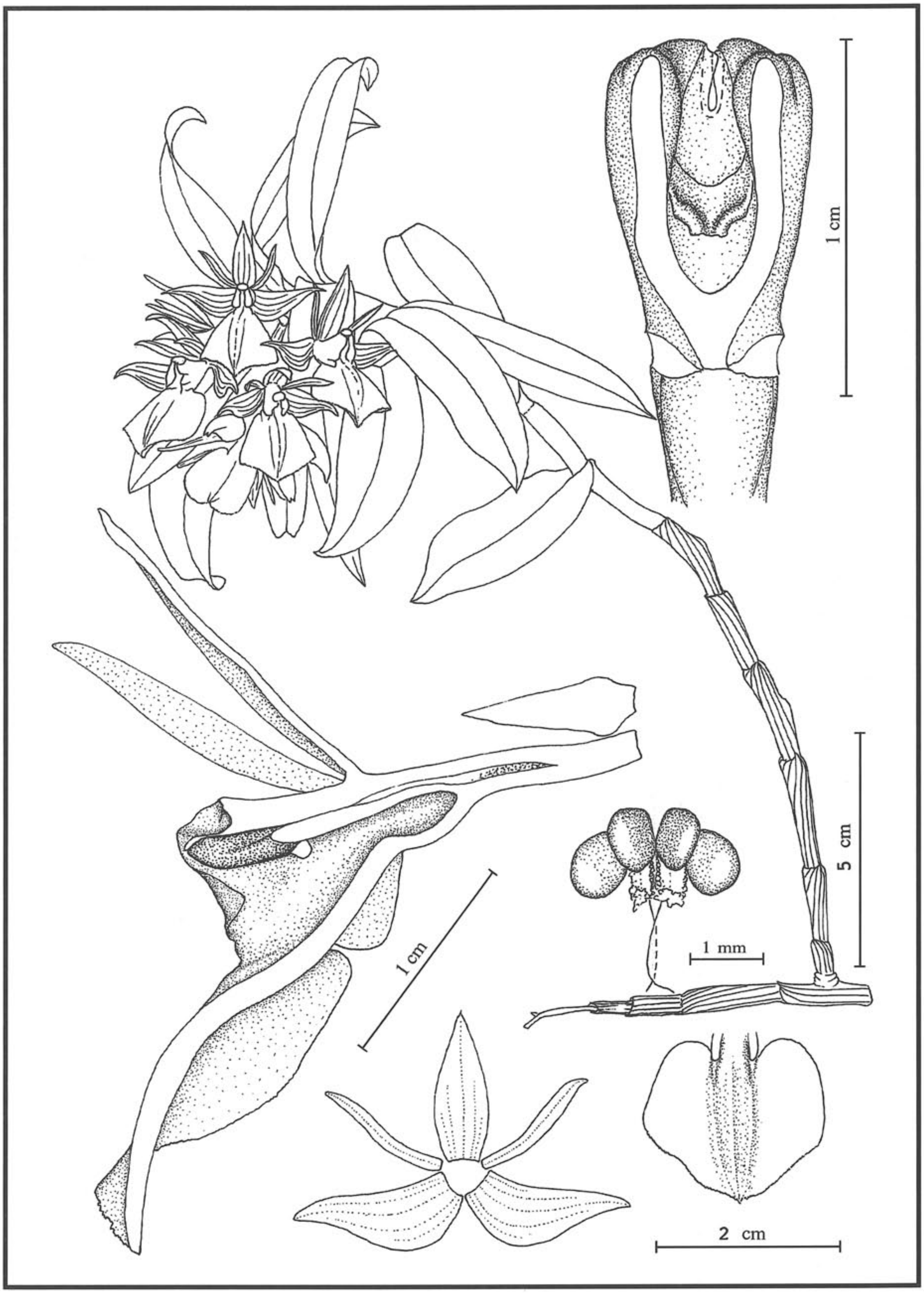
DISTRIBUTION AND ECOLOGY: Endemic to Peru, know from the upper slopes of the Cordillera oriental in Central Peru. Flowering from December to February.



RECOGNITION: *Epidendrum cardioepichilum* belongs to the Diothonea Group and Subgroup which is characterized by the branching habit, linear-lanceolate to lanceolate, bilobed leaves, arching-nutant, racemose inflorescence, membranaceous or rarely fleshy flowers, the lip entire to 3-lobed, with an erose margin, ecallose, without or with 1-10 thin, smooth to erose keels, the column united to the lip from totally to obliquely to free. The species is recognized by the short inflorescence, the yellowish-brown flowers with the apex of the lip pink, , the floral segments nearly parallel to the column, the apices revolute, the base of the lip forming a large cavity with the column, and the apex widely cordate and embracing the apex of the column. It is similar to *Epidendrum globiflorum* F.Lehm. & Kraenzl., but that species has oblong-ovate leaves, a very short inflorescence (ca. 1 cm long), greenish-white flowers, the lip united to the column throughout, clearly 3-lobed and with the margin spreading. *Epidendrum pseudoglobiflorum* Hágsater & Dodson has a dense inflorescence, the flowers trumpet-shaped (the sepals connate), orange to vermillion-red colored, and the lip suborbicular-hexagonal, totally united to the column. It is very similar to *Epidendrum pseudocardioepichilum* Becerra & Hágsater, which has green flowers, tinged magenta towards the apex of the floral segments, a narrower pouch, the epichile larger and rounded, and two quadrate wings at the apex of the column.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek καρδια, heart, επι- upon, or the apical portion, and χειλοσ, lip, in reference to the characteristic apex of the lip which is suddenly expanded, chordate-reniform, and embracing the apex of the column.



EPIDENDRUM CERINUM Schltr.

Plate 1109

EPIDENDRUM CERINUM Schltr., Beih. Bot. Centralbl. 36(3): 402. 1918.

Type: GUATEMALA: [Alta Verapaz:] Cobán, 1550 m, Juni 1913, ***H. von Tuerckheim 4179,*** Holotype: B, destroyed. Lectotype (here designated): tracing of the illustration of the type, AMES 24110!

Synonym: *Epidendrum comayaguense* Ames in Bot. Mus. Leafl. 1(8):1. 1933.

Type: HONDURAS: Comayagua, Minas de Oro, 4000 ft, 25 December 1932, ***J. B. Edwards 333***. Holotype: AMES 39042! (Copy of published illustration: K! SEL!) Isotype: AMES 39908!

Hierba epífita, simpodial, erecta, cada tallo nuevo se origina de un entrenudo intermedio del tallo anterior, 30-40 cm de alto. **Raíces** basales, sólo en el tallo inicial, gruesas, blancas, 3-4 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, los superiores gradualmente más cortos y delgados, 3.0-20 x 0.23-0.6 cm. **Hojas** 2-4[6], agrupadas en el ápice de los tallos, alternas, articuladas; vainas tubulares, ligeramente dilatadas en el ápice (en ejemplares secos), sin llegar a ser infundibuliformes, finamente estriadas, escariosas, 5-30 mm de largo; lámina angostamente elíptica, aguda, subcoriácea, margen entero, 3.5-11 x 0.8-3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueada, 3-5 cm de largo; pedúnculo lateralmente aplanado, delgado, bialado, recto, desprovisto de brácteas, 1.1-2.0 cm de largo; raquis lateralmente aplanado, bialado, corto, 2.0-3.5 cm de largo. **Brácteas florales** más cortas que el ovario, lanceoladas, acuminadas, abrazadoras, gradualmente más cortas, 3-10 mm de largo. **Flores** 2-10, sucesivas, aunque la mayoría llegan a estar abiertas de manera simultánea, resupinadas, lavanda grisáceo a pardo verdosas, de apariencia cerosa; sin datos de fragancia. **Ovario** terete, delgado, ligeramente dilatado en el ápice, no inflado, liso, 13-15 mm de largo. **Sépalos** entreabiertos, libres, acuminados, cóncavos, carnosos, 5-nervados, las nervaduras laterales cortas, margen extendido, entero, 17-24 x 7-9 mm; el **dorsal** lanceolado a angostamente ovado; los **laterales** angostamente ovados, oblicuos. **Pétalos** entreabiertos, libres, lineares a linear lanceolados, ligeramente falcados, agudos, 1-nervados, margen entero, 15-17 x 2-3 mm. **Labelo** unido a la columna de manera oblicua, entero, anchamente ovado, redondeado a cordado en la base, apiculado, los lados ligeramente revolutos, margen corto e irregularmente fimbriado, liso, 20-25 x 19-22 mm; ecalloso, provisto de un par de engrosamientos laminares incipientes en la base de la lámina, con 3 quillas, la central ancha y alargada hasta el ápice de la lámina, las laterales más cortas. **Columna** recta, con el ápice ligeramente arqueado hacia arriba, gruesa, muy carnosa, formando una apertura amplia y triangular en el ápice, 7-9 mm de largo. **Clinandrio** reducido, margen entero. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** muy pequeños. **Antera** subreniforme, 4-lócular. **Polinios** 4, subobovoides, lateralmente comprimidos; caudículas suaves y granulosas, casi tan largas como los polinios. **Cápsula** no vista.

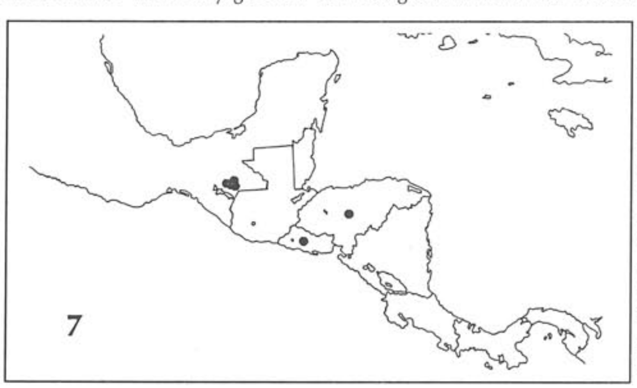
Epiphytic, sympidial, erect **herb**, the new stem originates from a middle internode of the previous stem. **Roots** basal, from the base of the plant only, thick, white. **Stems** simple, cane-like, terete, straight, the upper stems gradually thinner. **Leaves** 2-4[6], aggregate towards the apex of the stems, alternate, articulate; sheaths tubular, slightly dilated towards the apex when dry, minutely striated, scarious; blade narrowly elliptic, acute, subcoriaceous, margin entire. **Inflorescence** apical, flowering only once, racemose, arching; peduncle laterally compressed, thin, two-winged, straight; rachis laterally compressed, two-winged. **Floral bracts** shorter than the ovary, lanceolate, acuminate, gradually shorter. **Flowers** 2-10, successive, though most will be open at one time, resupinate, grayish lavender to greenish brown, wax-like. **Ovary** terete, thin, slightly dilated at the apex, smooth. **Sepals** partly spreading, free, acuminate, concave, fleshy, 5-veined, the lateral veins short, margin spreading, entire; **dorsal sepals** lanceolate to narrowly ovate; **lateral sepals** narrowly ovate, oblique. **Petals** partly spreading, free, linear to linear-lanceolate, slightly falcate, acute, 1-veined, margin entire. **Lip** obliquely united to the column, entire, widely ovate, apiculate, base rounded to cordate, smooth, the lateral margins somewhat revolute, margin short and irregularly fimbriate; ecallose, with a pair of incipient laminar thickenings at the base of the lip, 3-keeled, the mid-keel wide and reaching the apex of the lip, the lateral keels shorter. **Column** straight, the apex slightly arching upwards, thick, very fleshy, forming a wide, triangular aperture at the apex. **Clinandrium hood** reduced, margin entire. **Rostellum** apical, slit. **Anther** subreniform, 4-celled. **Pollinia** 4, subobovoid, laterally compressed; caudicles soft and granulose, nearly as long as the pollinia.

OTHER SPECIMENS: MÉXICO: Chiapas: E of Laguna Tziscao, Montebello National Park, 1300 m, 16 XI 1972, *Breedlove 29628,* CAS! La Independencia, Las Margaritas to Campo Alegre, 2300 m, 18 II 1973, *Breedlove 33611*, CAS! La Trinitaria to Montebello, 1600 m, 4 XII 1976, *Breedlove 42064*, CAS! NE of La Soledad along road from Las Margaritas to Campo Alegre, 1600 m, 7 XII 1986, *Breedlove* 66232, CAS! E of Comitán, Lake Tziscao, 1300 m, 11 II 1937, *Nagel sub Oestlund 6568*, AMES! Ibid. 16 III 1937, *Nagel sub Oestlund 6652*, AMES! Near Hacienda San José del Arco, Lake Montebello, 1350 m, 14 IV 1937, *Nagel sub Oestlund 6667*, AMES! 3 km al E de Tziscao, 1360-1390 m, 30 I 1989, *Soto 4514*, AMO! Ibid. *Soto 4515*, AMO! San Antonio de Buenavista, 1600-1650 m, 1 II 1989, *Soto 4533*, AMO! Ibid. *Soto 4554*, AMO! Ibid. *Soto 4556*, AMO! La Independencia, Lago Tziscao, 1350 m, 4 II 1989, *Soto 4861*, AMO! 3 km al E de Tziscao, 1360-1390 m, 23 VII 1989, *Soto 5750*, AMO! **GUATEMALA: Alta Verapaz:** Cobán, 6000 ft, 29 XII 1877, *von Tuerckheim 28,* W! **Guatemala:** Concepción Pinula, col. III 1979, *Hágsater 5776,* AMO! Ibid. pressed 28 XII 1979, AMO x2! Ibid. pressed 21 IX 1981, AMO x2! (Illustration voucher; Xerox ENCB! MEXU!) **Zacapa:** 4.5 miles N of San Lorenzo, Sierra de las Minas, 2225 m, 5 VII 1986, *Catling s.n.*, AMO! **EL SALVADOR:** San Salvador, Volcano San Vicente, 2100 m, col. 1 V 1969, pressed 17 VIII 1969, *Hamer 150,* AMES! MO! Volcan San Vicente, 2000 m, col. 9 V 1965, pressed 22 II 1969, *Hamer 150*[?], SEL! **NICARAGUA: [Matagalpa:]** Bavaria Finca, 1170 m, II 1962, *Heller 4112,* SEL!

OTHER RECORDS: MEXICO: Chiapas: Km 32 Lagos Montebello Road, 17 XII 1966, *Pollard R-32,* photographs and flower card, Pollard Notes, AMO! **GUATEMALA: Alta Verapaz:** Purulhá, col. 11 XI 77, illustrated IV 1979, *Dix 700*, sketch and xerox, AMO! **NICARAGUA: [Matagalpa:]** Bavaria Finca, 1170 m, II 1962, *Heller 4112,* illustration SEL! xerox of illustration, AMO!

DISTRIBUTION AND ECOLOGY: México (SE Sierra Norte de Chiapas), Guatemala (Sierra de Chama, Sierra de Las Minas), El Salvador (Volcán San Vicente), and central Honduras. Growing epiphytic at 1200-2300 m altitude. Flowering December to June.

RECOGNITION: *Epidendrum cerinum* belongs to the Arbuscula Group, Incomptum Subgroup which is characterized by the successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, a short apical inflorescence with fleshy greenish to violet-green flowers with short ovaries, the lip entire to 3-lobed. The species is recognized by larger, grayish lavender to greenish brown flowers, the sepals partly spreading, acuminate, 17-24 mm long and the widely ovate lip with a short and irregularly fimbriate margin, the lip obliquely united to the column. *Epidendrum bisulcatum* Ames has short, thin stems (3.5-7.0 x 0.12-0.35 cm), inflorescence with olive-green flowers, spreading, acute sepals 12-15 mm long, and a suborbicular lip, 11-12.5 mm wide, with an erose margin, and a pair of prominent laminar calli. *Epidendrum brenesii* Schltr. has 4-5 mm thick stems, 12 mm long sepals, a reniform, 15 mm wide lip, with the apex somewhat 4-lobed, an entire margin, and bicallose, the calli small, short mounts.



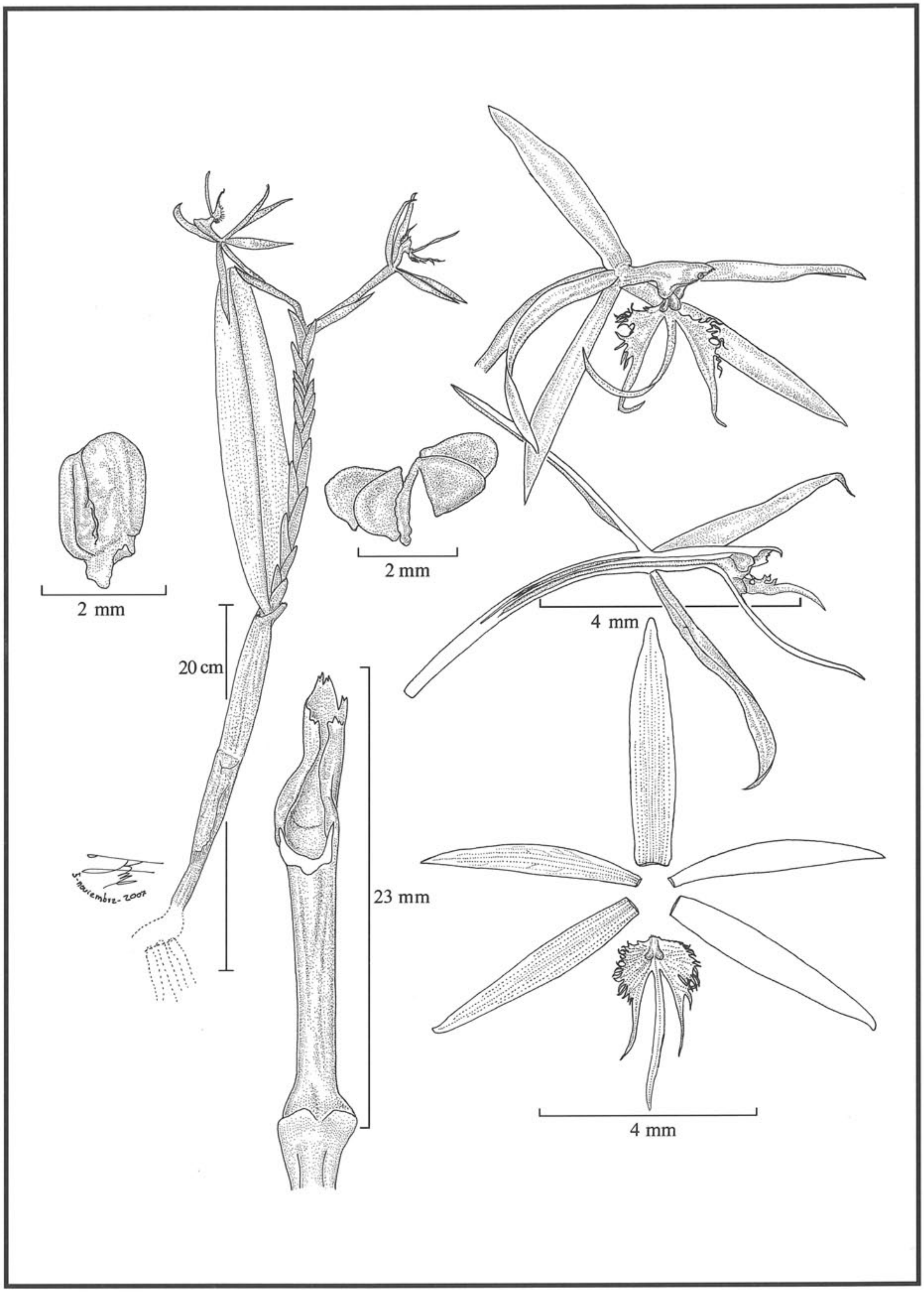
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *cera*, wax, and thus *cerinum*, in reference to the wax-like appearance of the flowers as described by the collector of the type, von Tuerckheim.

REFERENCES: Hamer, F. 1974. ***Las Orquídeas de El Salvador I***. 198. Ministerio de Educación, El Salvador. pg. 198.

Author: E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM CILIOCCIDENTALE Hágsater & L.Sánchez **Plate 1110**

EPIDENDRUM CILIOCCIDENTALE Hágsater *et* L.Sánchez, *sp. nov.*

Type: MEXICO: Jalisco: Talpa de Allende; El Tuito, collected abril 1970, ***Eric Hágsater 1080 B***, divided as ***Eric Hágsater 9257***. pressed cult. 29 junio 1987, Holotype: AMO! Isotypes: AMES! CHIP! F! IEB! K! NY! S! SEL! XAL! Clonotypes (***as Eric Hágsater 1080***): pressed cult. 2 julio 1983: AMO! P! pressed cult. 22 junio 1984, AMO! IBUG! MICH! MO! US!(Illustration voucher).

Epidendro ciliari L. simile sed inflorescentiam e caule formanti, pedunculo cum bracteis imbricatis numerosis tecto, petalis latioribus, in declivitatem Pacificam Mexicanam distributo, differt. *Epidendro megalemmum* Carnevali & G.A.Romero est similare sed petalis angustioribus et pedunculi bracteis imbricatis minus numerosis recedit; habitat in Americáe meridionalis parte bareali et in Antillis.

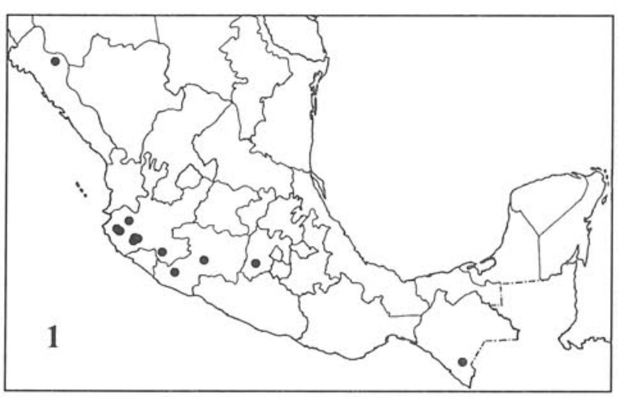
Hierba epífita, raramente litófita, simpodial, subcespitosa, 23-55 cm de alto. **Raíces** basales, carnosas, gruesas, 1.2-2.7 mm de grosor. **Tallos** sencillos, engrosados formando un seudobulbo fusiforme, heteroblástico, recto, 8.0-15 x 1.5-2.4 cm; cubiertos por 3-4 vainas papiráceas. **Hojas** 1 a raramente 2 en el ápice del seudobulbo, coriácea, articulada; lámina elíptica, ápice agudo, margen entera, extendida, 12-22 x 3.0-4.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida del tallo maduro, racemosa, dística, 13-30 cm de largo; pedúnculo lateralmente comprimido; cubierto por 6-22 brácteas, imbricadas, agudas, 1-3 cm de largo, las apicales más largas 3.0-4.5 cm de largo; raquis terete, delgado, recto a ligeramente sinuoso. **Brácteas florales** de la mitad a ligeramente más largas que el ovario, oblongo triangulares, conduplicadas, acuminadas, 3.0-6.0 cm de largo. **Ovario** terete, no inflado, no ornamentado, 30-80 x 1.0-1.8 mm. **Flores** 2-6, simultáneas, resupinadas, blancas, o con sépalos y pétalos verde amarillentos, callo blanco a amarillo pálido; fragancia intensa por la noche. **Sépalos** extendidos, libres, lanceolados, acuminados, 5-nervados, con numerosas venas secundarias dando la apariencia de ser 9-11 nervados, margen entero, revoluto, 37-63 x 5-7.8 mm; los **laterales** ligeramente oblicuos. **Pétalos** extendidos, arqueados hacia adentro, libres, elípticos, oblicuos, acuminados, 3-nervados, con numerosas venas secundarias, dando la apariencia de ser 5-7 nervados, margen entero, extendido, 41-55 x 3.0-5.0 [5.8-7.1] mm. **Labelo** unido a la columna, profundamente trilobado, base truncada a ligeramente cordada, 24-40 x 12-16 mm; bicalloso, los callos laminares, prominentes; lóbulos laterales oblicuamente semiovados, agudos, margen interno entero, margen externo profundamente laciniado a fimbriado, 9-14 x 3.5-6.0 mm; lóbulo medio linear, acuminado, margen entero, 20-30 x 1.0-1.5 mm. **Columna** recta a ligeramente arqueada, delgada, 15-21.5 mm de largo. **Clinandrio** prominente, dentado a fimbriado. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios, viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando un medio de la cavidad estigmática. **Nectario** profundo, penetrando casi la totalidad del ovario, no ornamentado. **Cápsula** subesférica, cuerpo 3.0 x 2.0 cm, cuello de 30 mm de largo.

Epiphytic, rarely lithophytic, sympodial, subcaespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, thickened to form a fusiform, heteroblastic, straight, pseudobulb; covered when young by papiraceous sheaths. **Leaves** 1 or rarely two, at the apex of the pseudobulb, coriaceous, articulate; blade elliptic, acute, margin entire, spreading. **Inflorescence** apical, produced from the apex of the mature stem, racemose, distichous; peduncle laterally compressed, covered by 6-22 imbricating, acute, bracts, the bracts progressively longer; rachis terete, thin, straight to slightly sinuous. **Floral bracts** half as along to somewhat longer than the ovary, oblong-triangular, conduplicate, acuminate. **Ovary** terete, not inflated, smooth. **Flowers** 2-6, simultaneous, resupinate, white, with the sepals and petals yellowish green, the callus white to pale yellow; fragrance intense at night. **Sepals** spreading, free, lanceolate, acuminate, 5-veined, with numerous secondary veins and thus appearing 9-11-veined, margin entire, revolute; the lateral sepals slightly oblique. **Petals** spreading, arching forwards, free, elliptic, oblique, acuminate, 3-veined, with several secondary veins so as to appear 5-7-veined, margin entire, spreading. **Lip** united to the column, deeply 3-lobed, base truncate to slightly cordate; bicallose, the calli laminar, prominent; lateral lobes obliquely semiovate, acute, inner margin entire, outer margin deeply laciniate-fimbriate; midlobe linear, acuminate, margin entire. **Column** straight to slightly arching, thin. **Clinandrium-hood** prominent, dentate to fimbriate. **Anther** subspherical, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, longer than the pollinia, viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** deep, penetrating nearly the whole of the ovary, smooth. **Capsule** subsphaerical, with a short pedicle and a long apical neck, about half as long as the body proper.

OTHER SPECIMENS: MÉXICO: Sinaloa: Near Palomas, in th foothills of the Sierra Madre, 13 VI 1897, *Rose s.n.*, US! Colomas 14 VII 1897, *Rose 1673*, US! km 83 del camino a Surutato, 1150-1200 m, 26 IV 1986, *Soto 2108*, AMO! **Nayarit:** Mazatlan, about 2 mi S of Mazatlán, 21 VI 1961, *Dressler 2645*, UC! US! **Jalisco:** Puerto Vallarta, entre los Llanitos y San Pedro, 800 m, 18 VI 1973, *González 892*, ENCB! Talpa de Allende, ca. de "El Tuito", km 35 de la carretera Pto. Vallarta-Barra de Navidad N W, ca. 450 m, 6 V 1986, *Hágsater 8614*, AMO! On Highway 110 between Colima and Ciudad Guzmán at Puente Tule, (N of Pihuamo), ca. 1000 m, 4 VIII 1960, *Iltis 693*, WIS! Mascota, 1200 m, 1 VI 1971, *Rosillo de Velasco s.n.*, AMO! Km 6.7 del camino El Tuito-Cuale, cerca de la desviación al Rancho Los Otates (SPA); 900 m 27 VI 1999, *Soto 8638*, AMO x2! Las Palmas, southeast of Puerto Vallarta, 1 IX 1986, *Warford s.n.*, AMO x2! Las Juntas-Los Veranos, 22 Km south of Puerto Vallarta, 1200 ft, 7 II 1988, *Warford 464*, AMO! Autlán de Navarro, south of the road above pass 10 miles south of Autlan toward La Resolana, 28 VI 1949, *Wilbur 1393*, DH! F! MEXU! MICH! **Guerrero:** Along highway 95, between kilometers markers 39-40, 3 miles north of El Rincón, 15 miles north of Tierra Colorado, 1500 m, 15 I 1979, *Croat 45689*, MO! Montes de Oca, San Antonio, 800 m, 2 VI 1937, *Hinton 10259*, AMO! B G! K! NY! SEL! US x2! Mina, Campo Morado-Otatlan, 1200 m, 5 X 1939, *Hinton 14258*, F! NY x2! US! Alcozauca Cañada del Mini-yao, Rancho, 1740-1900 m, 30 VIII 1989, *Rojas 86*, AMO! Chilapa, Camino de Chilapa hacia Hueycatenango, ca. 1500 m, 5 XI 1983, *Salazar 3693*, AMO! 30 Miles NE of Acapulco, 2000ft., 2 IX 1959, *Thomsen s.n.*, UC! **México:** Temascaltepec, Villa Neda, 23 V 1935, *Hinton 7800*, G! K NY! US! **Michoacán:** Coalcomán, 1080 m, 5 VI 1939, *Hinton 13782*, ARIZ NY! US! Sierra Madre, 1000 m, 15 IV 1899, *Langlassé 996*, G x3! K! P x2! US! Just North of La Sauda, 13 km north of La Huacana, 1020 m, 12 VI 1987, *Miller 3070*, CM! MO! SEL! **Chiapas:** Libertad, Acacoyagua, 50 m, 26 VI 1948, *Matuda 17951*, CAS! F! MEXU! SEL!

DISTRIBUTION AND ECOLOGY: The species has been recorded along the Pacific slope of Mexico (Sinaloa, Nayarit, Jalisco, Guerrero, Mexico, Michoacán and Chiapas). Epiphytic or rarely lithophytic, along streams and in pine-oak forests, at 450-1500 m altitude. Flowering apparently throughout the year, but mainly from May to August.

RECOGNITION: *Epidendrum cilioccidentale* belongs to the Coilostylis Group which is characterized by the sympodial, caespitose plants, the stems forming a fusiform, heteroblastic pseudobulb, with an apical, racemose, distichous inflorescence, the peduncle covered by large bracts (but not spathaceous bracts), and flowers large, star-shaped, with long, narrow sepals and petals. The species is recognized by the inflorescence which is produced from the 1 rarely 2-leaved, mature, fusiform pseudobulb, the peduncle covered by 6-22, imbricating, acute bracts. It is closely allied to the widespread *E. ciliare* L., which ranges from northwestern Mexico through Central America and the Antilles to south America in northern Brazil, and Peru, the inflorescences are produced from the immature pseudobulb, and the peduncle is covered by 1-6 tubular, oblong-triangular bracts, the petals are linear to narrowly ovate. *Epidendrum megalemmum* Carnevali & G.A.Romero is found in the lesser Antilles and very dry habitats in eastern Venezuela and northern Guyana, it has 2-3 leaves, rarely 1, and the inflorescence has somewhat fewer bracts (5-10), and narrower petals (2-3.2 mm rarely 4-4.5 mm). *Epidendrum x dorotheae* P.H.Allen is apparently a natural hybrid between *Epidendrum nocturnum* Jacq., and *E. ciliare*, produces flowers from an immature stem, on a rather simple, few-bracted peduncle, and the outer margin of the lateral lobes of the lip serrulate to slightly fimbriate. *Epidendrum oerstedii* Rchb.f. also flowers from the immature growth, but the margins of the lip are entire, and the midlobe of the lip is widened in the middle.

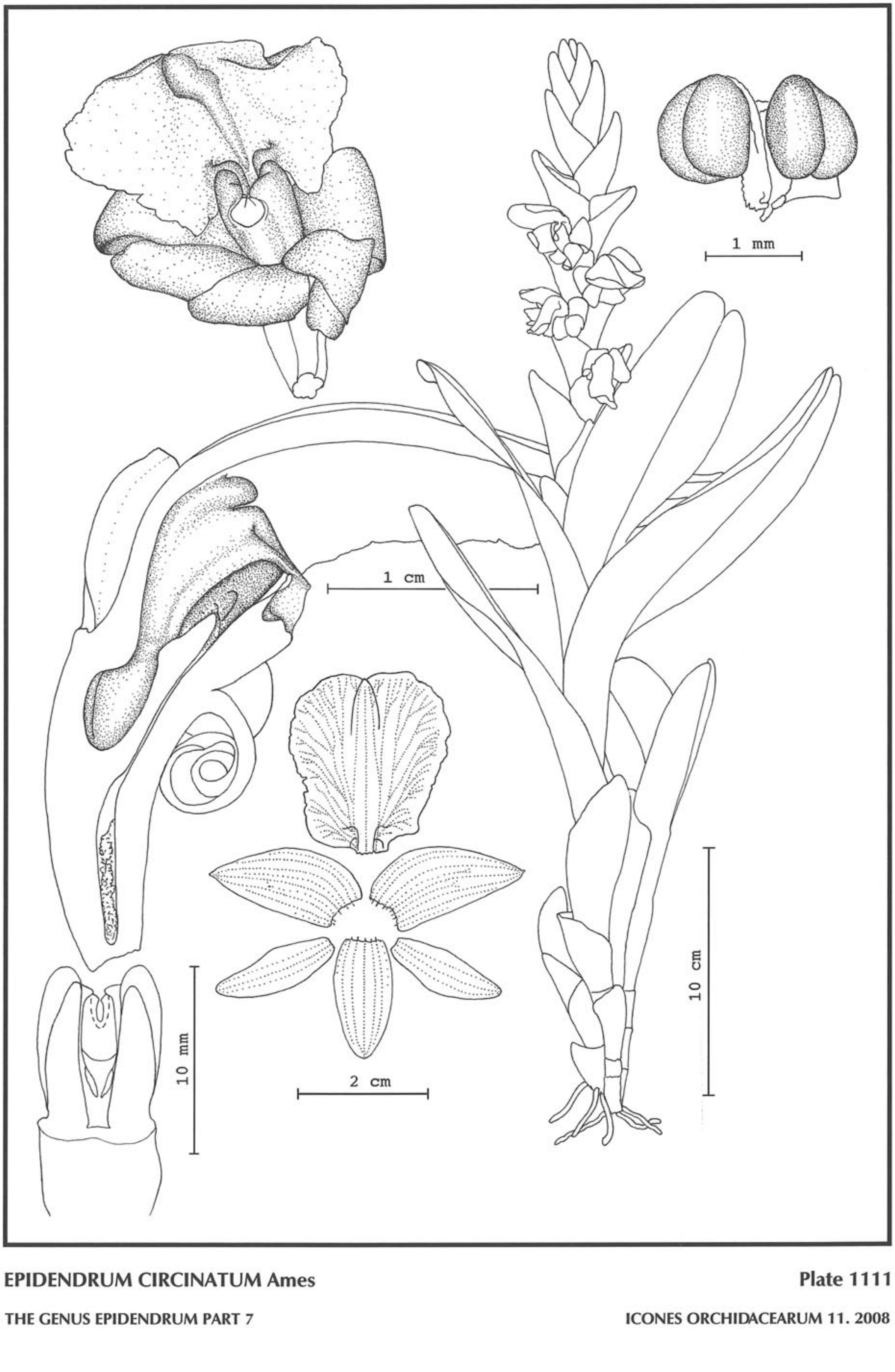


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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *ciliatus*, having fine hairs, resembling an eye-lash, referring to the outer margin of the lateral lobes, which this species shares with *E. ciliare*, and *occidentalis*, west, western, in reference to the western range of distribution of the species, especially when compared to the much more widespread *E. ciliare*, though they are sympatric in western Mexico.

Authors: E. Hágsater & L. Sánchez S. **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM CIRCINATUM Ames **Plate 1111**

EPIDENDRUM CIRCINATUM Ames, Sched. Orchid. 7: 4. 1924.

Type: COSTA RICA: [Cartago:] Peralta, 13 July 1923, ***Charles H. Lankester 477***. Holotype: AMES 27205!

Synonym: *Epidendrum concavilabium* C. Schweinf., Bot. Mus. Leafl. 4 (7): 118. 1937. Type: COSTA RICA: Alajuela: Colinas de San Pedro de San Ramón, 14 November 1927, ***Brenes (119) 1660***. Holotype: AMES!

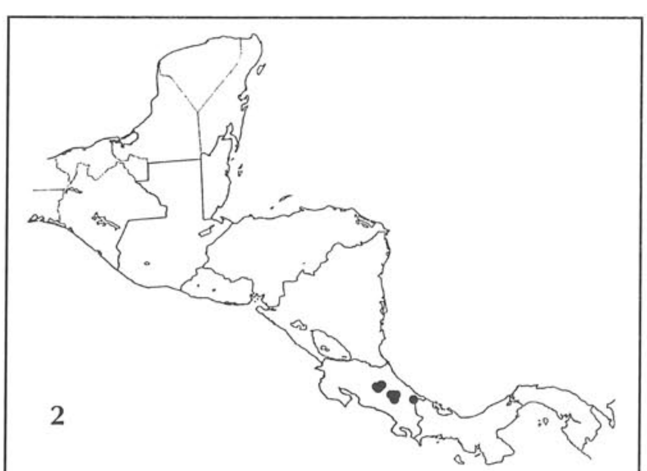
Hierba epífita, cespitosa, simpodial, 20-40 [50] cm de alto sin incluir la inflorescencia; verde claro. **Raíces** basales, carnosas, gruesas, 1-2 mm de grosor. **Rizoma** corto, 1 cm de largo. **Tallos** sencillos, tipo caña, lateralmente comprimidos, ancipitosos, sinuosos, 9-22 [35] x 0.7-1 cm; cubiertos por 3-4 vainas infundibuliformes, tubulares, obtusas, no imbricadas, con una quilla prominente en la parte dorsal, progresivamente más grandes hacia el ápice, 2.5-8 x 1.5-2.2 cm. **Hojas** 2-4, en la parte apical del tallo; vaina tubular, lateralmente comprimida, ancipitosa, lisa, 2-6 cm de largo; lámina elíptica a elíptico obovada [angostamente obovada], articulada con la vaina, ápice desigualmente bilobado, margen entero, subcoriácea, flexible, lisa, verde claro, 7-18 [22] x 3.2-5.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, erecta, racemosa, dística, secundiflora, del tallo maduro, florece una sola vez, 15-26 [29] cm de largo; pedúnculo lateralmente comprimido, ancipitoso, muy corto, 4-5 cm de largo, con una bráctea semejante a las florales, ampliamente ovado-lanceolada, 2-4 x 1.1-1.5 cm., raquis flexuoso, lateralmente comprimido, ancipitoso, con el borde diminutamente eroso. **Brácteas florales** espaciadas, extendidas a un ángulo de unos 45°, más largas que el ovario, ampliamente-ovadas ocasionalmente lanceoladas, conduplicadas, ápice redondeado y diminutamente eroso, algo incurvadas, 20-33 x 10-15 mm de largo. **Flores** 9-16, sucesivas, dísticas, secundas, no resupinadas, desarrollándose en varios estadíos, 2-4 abiertas a la vez, verdes a blanco verdosas; sin fragancia aparente. **Ovario** dilatado cerca del ápice, terete, no ornamentado, 10-20 mm de largo. **Sépalos** fuertemente, fuertemente enrollados hacia atrás, libres, ovados a oblongo lanceolados, glabros, coriáceos, margen entero; el **dorsal** obtuso, 5-nervado, 7-18 x 6-8 mm; los **laterales** oblicuos, algo falcados, agudos, con una quilla prominente en el ápice y cuyo margen es dentado, 7-nervados, 14-23 x 9-10 mm. **Pétalos** fuertemente enrollados hacia atrás (circinados), oblicuos, elípticos a rómbicos u oblongo lanceolados, obtusos, margen entero, 3-nervados, 14-22 x 4-9 mm. **Labelo** unido a la columna, entero, inflexo en un ángulo de 90 grados con respecto al eje de la columna, obovado a panduriforme u oscuramente trilobado, cóncavo, base truncada, ápice emarginado, márgenes erosos, 23-28 (31) x 17-25 mm, 1cm de ancho hacia la parte basal; bicalloso, con callos cortos debajo de la columna, pegados al labelo y con una carina central gruesa y roma. **Columna** recta, gruesa, 8-10 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoidea, 4-locular, lisa. **Polinios** 4, obovoideos, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** muy pequeños, menos de ¼ del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando la cuarta parte del ovario, liso interiormente. **Cápsula** elipsoide, 3 x 1.5 cm, pedicelo 1 cm de largo, cuello apical de 1.5 cm de largo.

Epiphytic, sympodial, caespitose **herb**. Stems simple, cane-like, laterally compressed, ancipitose, sinuous, sheathed at the base with conical tubular sheaths. **Leaves** 2-4, articulate, elliptic to obovate-elliptic, subcoriaceous, apex rounded and unequally bilobed, light green. **Inflorescence** apical, from the mature stem, flowers only once, racemose, distichous, secund, erect; rachis flexuous, laterally compressed, ancipitose. **Floral bracts** longer than the ovaries, spreading some 45° from the axis of the rachis, conduplicate, apex rounded to bilobed, spaced apart (i.e., not imbricating), divergent, green. **Flowers** 9-16, successive, developing and opening 2-4 at a time, green, the sepals and petals light green, the lip greenish white to dull green. **Ovary** thick, terete. **Sepals** strongly coiled backwards, ovate to oblong-lanceolate, the dorsal obtuse, 5-veined, the lateral ones acute, 7 veined. **Petals** strongly coiled backwards, elliptic to rhombic, 3 veined. **Lip** united to the column, fleshy, inflexed at a 90 degree angle with the axis of the column, obovate to pandurate, to slightly 3-lobate, concave, bicallose, with a thick central keel running down to the apex, base truncate, apex emarginate, with erose margins. **Column** straight. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled, smooth. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles soft and granulose, slightly longer than the pollinia; viscidium semiliquid transparent. **Rostellum** apical, slit. **Nectary** short, penetrating ¼ of the ovary, wide.

OTHER SPECIMENS: **COSTA RICA: Cartago:** Jardín Lankester, received 18 III 1982, pressed cult. 7 IV 1983, *Hágsater 6731*, AMO! (Illustration voucher.) Ibid. pressed cult. 4 IX 1984, AMO! INB! Ibid. pressed cult. 18 IX 1986, AMO! Ibid. pressed cult. 23 XI 1992, AMO! Ibid. pressed cult. 18 IX 1996, AMO! Rio Pejibaye, col. 21 III 1982, pressed cult. 8 VIII 1984, *Hágsater 6810*, AMO! Ibid. pressed cult. 4 IX 1984, AMO! Ibid. pressed cult. 21 VI 1985, AMO! Ibid. pressed cult. 10 V 1986, AMO! Ibid. pressed cult. 18 IX 1986, AMO! Ibid. pressed cult. 18 VII 1997, AMO! Ibid. pressed cult. 29 VIII 1997, AMO! Pejibaye, 16 V 1924, *Lankester 844*, AMES! Taus, pastures beside Río Pejibaye between Río Taus and Quebrada Azul, 28 V 1972, *Lent 2553*, CR! F! NY! Jardín lankester, VII 1990, *Mora s.n.*, USJ! **Heredia:** Sacramento, 1 III 1983, *Mora s.n.*, USJ! San José de la Montaña, 15 III 1981, *Mora s.n.*, USJ 24442! **Limón:** Cantón de Talamanca, Bratsi. Amubri, Alto Lari, siguiendo la fila entre Río Dapari y Río Lari, 3 III 1992, *Herrera 5159*, AMO! CR! MO!

OTHER RECORDS: PANAMA: Bocas del Toro: Hill slope at Boca Chica Creek, 5.8 km SE of the community Charco La Pava, 2007, *Laube 590*, PMA. Digital image of live plant, AMO!

DISTRIBUTION AND ECOLOGY: Found in Costa Rica, from the Cordillera Central and the Cordillera de Talamanca, recently in Bocas del Toro, Panama; epiphytic in premontane and montane rain forest, at 350-2000 m altitude. Flowering from August to April.

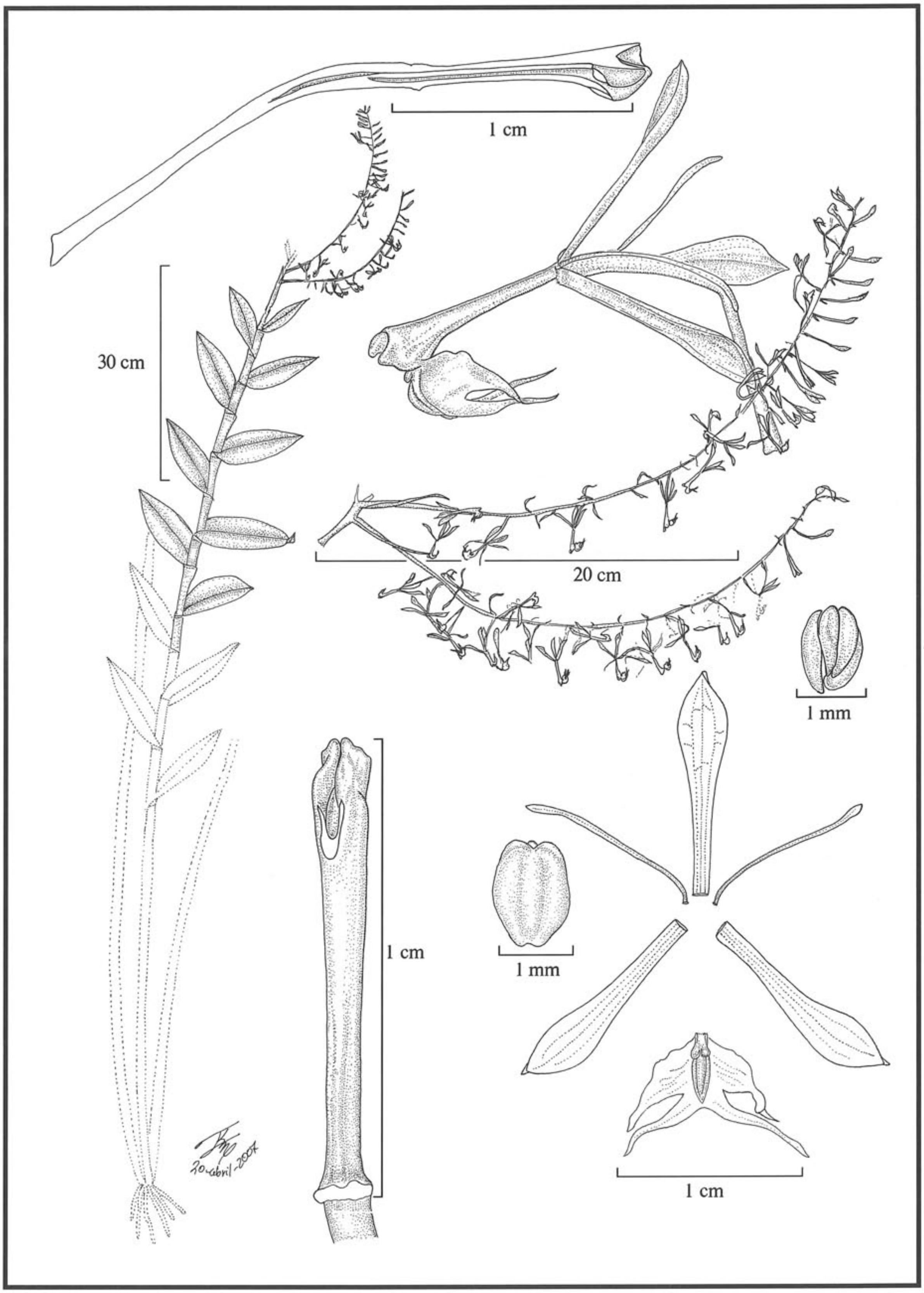


RECOGNITION: *Epidendrum circinatum* belongs to the Spathiger group characterized by the sympodial habit, coriaceous leaves, racemose, distichous, inflorescence, and fleshy green to purplish flowers, and the circinatum subgroup which has large, secund flowers. The species is recognized by the large plants, its broadly laterally compressed stems, the wide, elliptic to obovate-elliptic, rounded, emarginate leaves, successive, non-resupinate flowers, the sepals and petals strongly coiled backwards, and the pandurate, obovate to obscurely 3-lobed lip inflexed at an angel of 90° with respect to the axis of the column. It is similar to *E. vexillium* Hágsater, which has spreading sepals and petals, and a subrectangular to suborbicular lip, wider towards the base. *Epidendrum galeochilum* Hágsater is vegetatively similar but has a deeply concave lip, reminiscent of a pipe.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin, *circinatus*, coiled inwards from the tip, in reference to the sepals and petals which are strongly coiled backwards.

Authors: R. Jiménez M. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM CIRRHOCHILOIDES Hágsater & E.Santiago **Plate 1112**

EPIDENDRUM CIRRHOCHILOIDES Hágsater *et* E.Santiago, *sp. nov.*

Type: PANAMA: Coclé: Continental Divide above El Copé, 650-750 m, 27 November 1985, ***G. de Nevers, A. Henderson, H. Herrera, G. McPherson & L. Brako 6396.*** Holotype: MO! Isotype: AMO! (Illustration voucher)

Epidendro cirrhochilo F.Lehm. & Kraenzl. simile sed foliis majoribus latioribusque ellipticis, floribus majoribus, labello bicalloso valde convexo et aliquantum reflexo cum lobulis apicalibus acuminatis non cirrhosis, divergens.

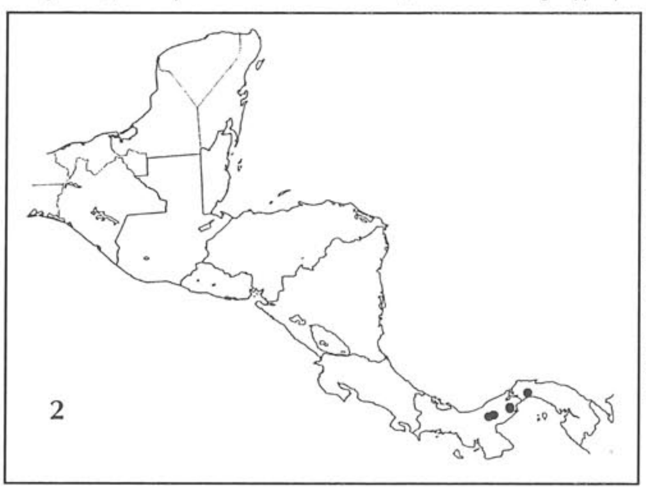
Hierba epífita, simpodial, cespitosa, 52-150 cm de alto. **Raíces** basales, carnosas, delgadas, 1-3 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, gradualmente más delgados hacia el ápice, erectos, rectos, 36-120 x 0.3-1.2 cm; la parte basal oculta en su totalidad por brácteas tubulares, infundibuliformes (cuando secas), no foliáceas, fibrosas y escariosas con el tiempo, 4-6 cm de largo. **Hojas** 9-16, distribuidas en los dos tercios apicales del tallo, articuladas, alternas, elípticas, cortamente acuminadas; vainas tubulares, las de la parte media del tallo algo infundibuliformes en el ápice (cuando secas), finamente estriadas, 2.3-5.5 x 0.4-1.6 cm; lámina elíptica, cortamente acuminada, con las nervaduras claramente marcadas, margen entero, [6]10-21 x 1.5-5.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, suberecta, paniculada, pluriflora, 18-50 cm de largo; pedúnculo lateralmente aplanado, corto, 3-6.5 cm de largo; provisto de 1 a 2 brácteas tubulares, acuminadas, 2-5 cm de largo; las brácteas de las ramificaciones, angostamente triangulares, largamente acuminadas, abrazadoras, 1.5-4 cm de largo. **Brácteas florales** de más de la mitad del largo del ovario, (gradualmente más cortas) linear lanceoladas, acuminadas, abrazadoras, 3-14 mm de largo. **Ovario** terete, delgado, no inflado, 14-18 mm de largo. **Flores** 60-200, la mayoría abiertas de manera simultánea, (algunas apicales presentes aún en botón floral) resupinadas, sépalos y pétalos blancos a verdosos, labelo blanco con rayas púrpureas; sin datos de fragancia. **Sépalos** reflexos, libres, linear espatulados, subagudos, diminutamente apiculados, ligeramente cóncavos, 3-nervados, margen entero, extendido, 11-12 x 2-3 mm. **Pétalos** reflexos, libres, filiformes, ápice redondeado, 1-nervados, margen entero, extendido, 9.7-11 x 1 mm. **Labelo** unido a la columna, 3-lobado, fuertemente convexo y algo reflexo en posición natural, ligeramente unguiculado en la base, 6.5-8 x 10-10.5 mm; bicalloso, los callos pequeños, subglobosos; disco provisto de 3 quillas carnosas, agudas, paralelas (el par lateral más corto); lóbulos laterales oblicuamente triangulares, acuminados, margen subentero, extendido, 3-3.5 x 2.3-2.5 mm; lóbulo medio bilobado, 3.5-4.5 x 10-10.5 mm; cada lóbulo linear filiforme, largamente acuminado. **Columna** recta, delgada, 10 mm de largo. **Clinandrio** reducido (la antera expuesta casi en su totalidad), margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, tipo "ala de pájaro", fuertemente comprimidos lateralmente, los interiores más pequeños; caudículas laminares, más cortas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de ½ del largo de la cavidad estigmática. **Nectario** corto, penetrando ligeramente el ovario, no inflado, liso. **Cápsula** no vista.

Epiphytic, simpodial, caespitose **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, laterally compressed, gradually thinner towards the apex, erect, straight; the basal part totally hidden by tubular, infundibuliform (when dry), non-foliaceous bracts, becoming fibrous and scarious with time. **Leaves** 9-16, distributed throughout the apical 2/3 of the stem, articulate, elliptic, short-acuminate; sheaths tubular, those in the mid-section somewhat infundibuliform towards the apex (when dry), minutely striated; blade very large, elliptic, short acuminate, with the veins clearly marked, margin entire. **Inflorescence** apical, suberect, paniculate, many-flowered, large; peduncle laterally compressed, short, provided with 1 or 2 tubular, acuminate bracts; the bracts of the branches narrowly triangular, long-acuminate, amplexicaul. **Floral bracts** more than half long than the ovary, linear-lanceolate, acuminate. **Ovary** terete, thin, not inflated. **Flowers** 60-200, most of the open simultaneously, (some apical buds still present), resupinate, sepals and petals white to greenish, lip white with purple lines. **Sepals** reflexed, free, linear-spatulate, subacute, minutely apiculate, slightly concave, 3-veined, margin entire, spreading. **Petals** reflexed, free, filiform, apex rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, strongly convex and somewhat reflexed in natural position, slightly unguiculate at the base; bicallose, the calli small, subglobosa; lateral lobes triangular oblique, acuminate, margin subentire, spreading; midlobe bilobed, each lobe linear-filiform, long-acuminate. **Column** straight, thin, long. **Clinandrium-hood** reduced, the anther nearly totally exposed, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, "bird-wing" type, strongly laterally compressed, the inner pair smaller; caudicles laminar, shorter than the pollinia. **Rostellum** apical, slit. **Nectary** short, slightly penetrating the ovary, not inflated, smooth.

OTHER SPECIMENS: PANAMÁ: Coclé: 7 km N of El Copé, near Rivera Sawmill, 700-850 m, 10 IX 1977, *Folsom 5229*, MO! **Panamá:** Hills above Campana, 600-800 m, 1 VII 1939, *Allen 1882*, MO x3! Cerro Campana, 25 V 1971, *Croat 14729*, MO x3! Cerro Campana, 2700 ft, 2 VII 1978, *Hammel 3772*, MO! Río Tapia, 7 XII 1923, *Standley 28137*, AMES! US!

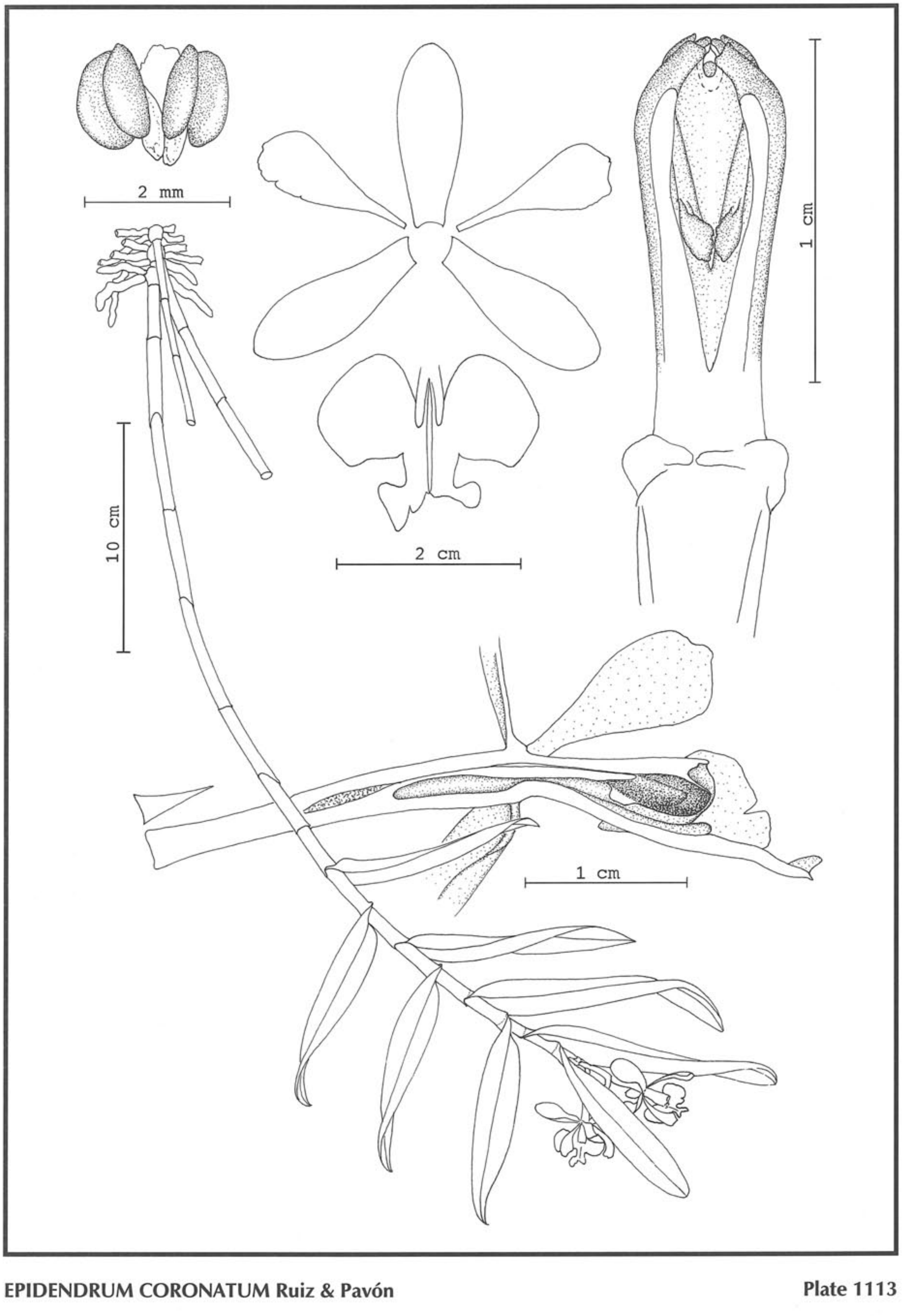
DISTRIBUTION AND ECOLOGY: Endemic to central Panama, epiphyte in cloud forest, at 650 to 850 m altitude. Flowering May to December.

RECOGNITION: *Epidendrum cirrhochiloides* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, and Paniculatum Subgroup, which has green and white flowers, often marked with purple on the disc of the lip and apex of the column. The species is recognized by the large plants, elliptic leaves, greenish-white flowers, the lip marked with purple lines, 11-12 mm long sepals, the lip bicallose, with the apical lobes long-acuminate, and nearly reflexed. It resembles *Epidendrum cirrhochilum* F.Lehm. & Kraenzl. which has smaller plants with oblong to oblong-lanceolate leaves, smaller flowers, sepals 7 mm long, a single callus on the lip, and the apical lobes acuminate-cirrhose. *Epidendrum piliferum* Rchb.f. has somewhat larger plants (up to 2 m tall), larger flowers (sepals 12.5-17 x 3.5-5 mm), and the lip with the apical lobes rounded.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek, κιρρος, tendril, curled hair, and *χειλος*, lip, in reference to the apical lobes of the lip which are long, and tendril-like, as in *E. cirrhochilum*, and the suffix *-oides*, which indicates resemblance.



EPIDENDRUM CORONATUM Ruiz & Pavón **Plate 1113**

EPIDENDRUM CORONATUM Ruiz & Pavón, Syst. Veg. Fl. Peruv. Chil. 1: 242. 1798.

Type: PERU: Huánuco; Habitat in Pozuzo supra arbores et saxa, floret septembre et octobri, ***Ruíz y Pavón s.n.*** Holotype: MA, phototype in AMES! F! SEL!

Synonyms: *Epidendrum benignum* Ames, Sched. Orchid. 2: 26. 1923. Type: COSTA RICA: Forets de Nicoya, May 1900, ***A. Tonduz 13928***. Holotype: US 577906!

Epidendrum sulphuroleucum Barb. Rodr., Gen. & Sp. Orch. Nov. 1: 56. 1877. Type: BRAZIL: Minas Geraes; Dans la serra da fazenda de Santa Rosa, au Carmo do Rio Claro. Fleurit en Septembre. Holotype: Herb. Barb. Rodr., destroyed. Lectotype: (here designated): Icon. Orch. Brésil, tab. 380 (vol 4: t. 20), original illustr. AMES! Copy K-L! Published in S. Sprunger (ed.), Icon. Orch. Brésil, 1: t. 283. 1996.

Epidendrum subpatens Schltr., Repert. Sp. Nov. Regni Veg. Beih. 17: 40. 1922. Type: PANAMÁ: Colón, Im Gebiete des Gatun-Sees und auch in Veraguas bei Santiago, ***Powell 86***. Holotype: B, destroyed. Isotype: AMES 23943! Clonotypes: Gatun Lake, 0 m, 1 V 1923, ***Powell 3337*** *(Powell 86)*, AMES! Ibid., 500 ft, 1 IV 1924, ***Powell 3543*** *(Hort. Powell 86)*, AMES x2!

Epidendrum moyobambae Kraenzl., Repert. Spec. Nov. Regni Veg. 1: 185. 1905. PERU, Loreto, bei Moyobamba, 800-900 m, *A. Weberbauer 4563*. Holotype: B, destroyed, photo of type: AMES! F! MO! NY! SEL!

Epidendrum amazonicum Schltr., Beih. Bot. Centralbl. 42 (2): 78. 1925. Type: Brazil, Baixo, Rio Branco, I 1913, *G. Kuhlmann 780*. Holotype: B, destroyed. Isotype: AMES 111776!

Hierba epífita, raramente litófita, simpodial, cespitosa, arqueada, hasta ca. 50 cm de alto. **Raíces** basales, carnosas, gruesas, ca. 3.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos o flexuosos, 30-44 x 0.5-0.9 cm. **Hojas** 6-12, distribuidas hacia la mitad apical del tallo; vaina tubular, lisa, estriada cuando seca, 4-5 cm de largo; lámina foliar articulada, angostamente elíptica a lanceolada, aguda, (mucronada), subcoriáceas, lisa, margen entero, verde, en ocasiones algo amoratada, 7-14 x 1.8-4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, raramente paniculada con 1 o 2 ramas cortas, producida del tallo maduro, florece una sola vez, arqueado-colgante, 7-45 cm de largo; pedúnculo corto, 2-5 cm de largo, con 1-3 brácteas espaciadas, conduplicadas, oblongo-triangulares, agudas, envolventes, 8-19 x 4-6 mm; raquis lateralmente comprimido en la base, arqueado, no ornamentado, ligeramente en zigzag. **Brácteas florales** mucho más cortas que el ovario, abrazadoras, triangulares, agudas, 5-8(16) x (1.5)4-6 mm (sin extender). **Flores** 4-40, simultáneas, abriendo desde la parte media de la inflorescencia hacia los extremos, resupinadas, dísticas, céreas, blanco marfil o crema, sépalos blanco-pardos con rojizo en el dorso, fragancia diurna ligera dulce-verdosa, nocturna a limón. **Ovario** terete, no ornamentado, 2.6-4 cm de largo. **Sépalos** extendidos, libres, obovados a oblanceolados, obtusos a redondeados, glabros, coriáceos, 7-nervados; el dorsal, cuneado, margen entero, ligeramente revoluto, 1.9-2.1 x 0.7-0.9 cm; los laterales, oblicuos, cuneados o ligeramente oblongos en la base, margen entero, ligeramente revoluto, extendido hacia el ápice, con quilla dorsal prominente y dentada, 2.0-2.2 x 0.7-0.9 cm. **Pétalos** extendidos, espatulados a oblanceolados, obtusos a redondeados, 5-nervados, margen entero, revoluto, extendido hacia el ápice, (1.6)2.0 x 0.5-0.7 cm. **Labelo** unido a la columna, trilobado, (1.6)1.8 x 2.1-2.3 cm; bicalloso, callos laminares, prominentes, unicarinado, carina prominente a todo lo largo de la lámina del labelo, roma, angosta; lóbulos laterales trapezoidales a doblariformes o suborbiculares, con los lados redondeados, margen entero, 0.9-1.3 x 1.2-1.4 cm; lóbulo medio más pequeño, bilobado, lóbulos divergentes, suborbiculares a obovados, margen entero, ápice profundamente partido, 0.5-0.8 x 0.7-0.8 cm. **Columna** recta, obcónica, gruesa, verde, 12-15 x 6.5-7.5 mm. **Clinandrio** reducido, sin llegar al ápice del cuerpo de la columna, margen entero. **Antera** ovoide, 4 locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, ligeramente más largas que los polinios; viscidio semilíquido transparente. **Rostelo** en el ápice del cuerpo de la columna, hendido. **Lóbulos laterales del estigma** prominentes, de un tercio del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando una cuarta parte del ovario, liso interiormente. **Cápsula** elipsoide, con perianto persistente, con pedicelo de 7-9 mm, cuerpo de 2.5-3 x 1.2-1.5 cm, con cuello corto de 8 mm.

Epiphytic, rarely lithophytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete, straight to flexuous. **Leaves** 6-12, distributed towards the apical half of the stem; sheaths tubular, smooth, striated when dry; blade articulate, narrowly elliptic to lanceolate, acute, mucronate, subcoriaceous, margin entire, green, sometimes tinged purple. **Spathaceous bract** lacking. **Inflorescence** apical, racemose, rarely paniculate with 1 or 2 short branches, dense, produced from the mature stem, flowering only once, arching-nutant; peduncle short, with 1-3 conduplicate, oblong-triangular, acute, spaced bracts; rachis laterally compressed at the base, arching, un-ornamented, slightly zigzag. **Floral bracts** much shorter than the ovary, amplexicaul, triangular, acute. **Flowers** 4-40, simultaneous, opening from the middle of the inflorescence towards the base and apex, resupinate, distichous, waxy, ivory-white or cream-colored, sepals turning brownish white, dorsally reddish; fragrance diurnal, slight, sweet-green, during night-time of lemon. **Ovary** terete, smooth. **Sepals** spreading, free, obovate to oblanceolate, obtuse to rounded, glabrous, coriaceous, 7-veined; the dorsal sepal cuneate, margin entire, slightly revolute; the lateral sepals oblique, base cuneate to oblong, margin entire, slightly revolute, spreading towards the apex, with a prominent dorsal, dentate keel. **Petals** spreading, spatulate to oblanceolate, obtuse to rounded, 5-veined, margin entire, revolute, spreading towards the apex. **Lip** united to the column, 3-lobed; bicallose calli laminar, prominent, 1-keeled, keel prominent running down the length of the lip, rounded, narrow; lateral lobes trapezoid to dolabriform or suborbicular, the sides rounded, margin entire; midlobe smaller, bilobed, lobes divergent, suborbicular to obovate, margin entire, apex deeply slit. **Column** straight, obconical, thick, green. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles soft and granulose, slightly longer than the pollinia, viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** shallow, penetrating 1/4[th] of the ovary, smooth. **Capsule** ellipsoid, perianth persistent, pedicel short, apical neck short.



OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widely distributed, though scarce in México, Guatemala, Nicaragua, Costa Rica, Trinidad y Tobago, Guyana, Suriname, Colombia, Venezuela, Ecuador, Brasil, Perú y Bolivia. Epiphytic or lithophitic on rocky banks along rivers, in tropical forests, rain forests, from sea level to 1800 m. Flowering August to April.

RECOGNITION: *Epidendrum coronatum* belongs to the Coronatum Group, which is distinguished by the relatively large plants, stems with numerous leaves, apical, racemose inflorescence, without spathaceous bracts, large flowers with fleshy, waxy-like, the lip 3-lobed, bicallose at the base. The species is recognized by the relatively large plants, subcoriaceous leaves, arching-pendent, racemose inflorescence, without spathaceous bracts, flowers waxy, ivory-white, the apical lobe is deeply two lobed. It is similar to *Epidendrum ammophyllum* Barb. Rodr. from Brazil which has an erect, corymbose, few-flowered inflorescence. It is vegetatively similar to *Epidendrum tessmannii* Schltr. from Peru, which has several erect-arching inflorescences, small greenish flowers, sepals less than 15 mm long, and the midlobe of the lip reduced, 2 mm long.

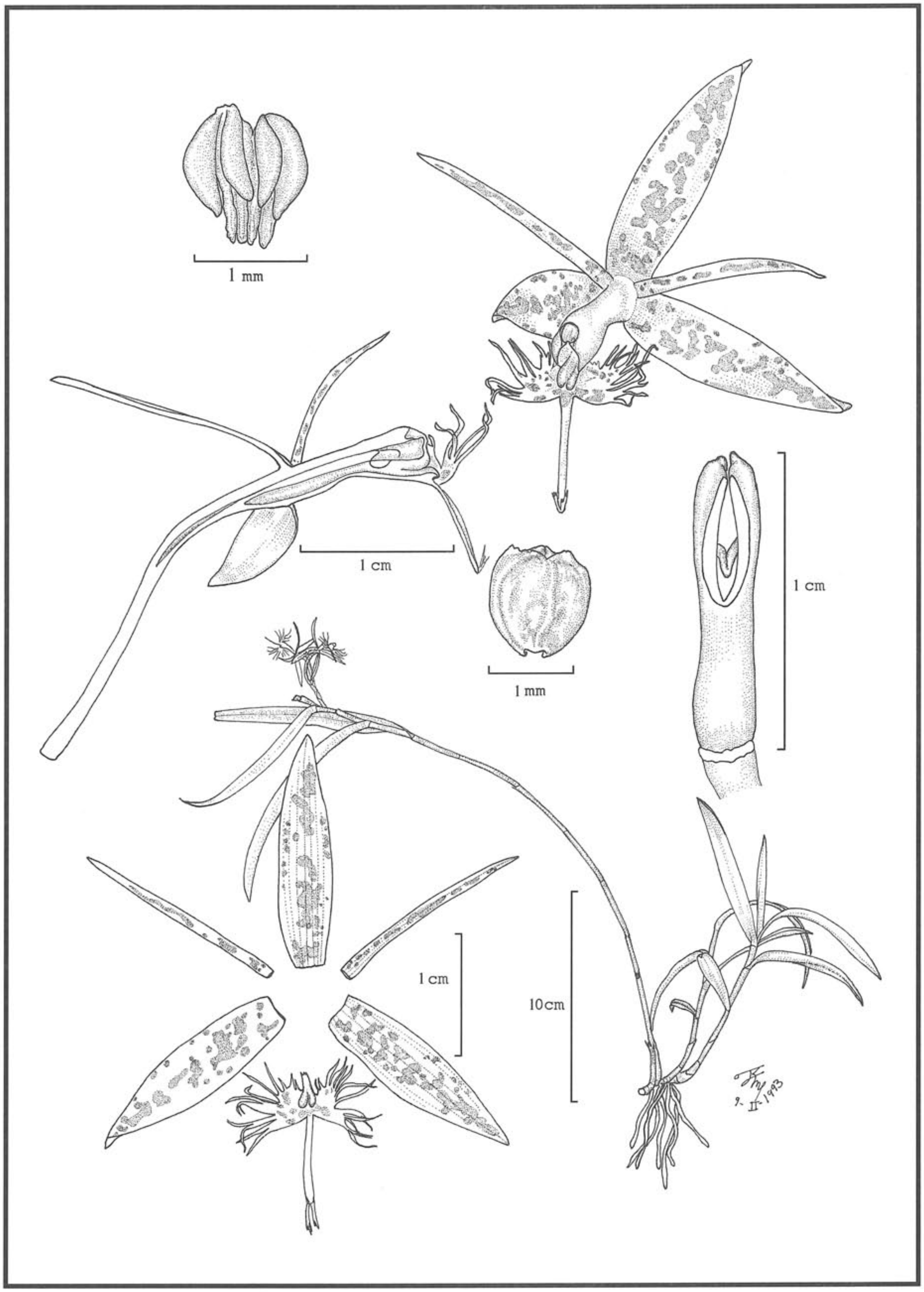
CONSERVATION STATUS: DD. Data deficient. The species is locally scarce north of Costa Rica, but widely distributed. It is probably threatened in its northern range.

ETYMOLOGY: From the latin *coronatum*, crowned, probably refers to the attractive inflorescence that crowns the stem.

REFERENCES: Carnevali G., *et al.*, 2003. in Steyermark J. A. *et al.* (eds.) Flora of the Venezuelan Guyana, 7: 345. Foldats E., 1970. Orchidaceae in Flora de Venezuela, 15 (3): 219-221. Garay, L. A. & G. C. K. Dunsterville, 1965. Venezuelan Orchids Illustrated, 1: 98-99. Schultes, R. E., 1960, Native Orchids of Trinidad and Tobago, p. 112 (15) (as *E. moyobambae*). Werkhoven, M. C. N. Orchids of Suriname. Vaco-Press. Paramaribo, p 124 (pp 256).

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Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM CRINIFERUM Rchb.f. **Plate 1114**

EPIDENDRUM CRINIFERUM Rchb.f., Gard. Chron. 1871: 1291. 1871.

Type: COSTA RICA: Hort. ***Veitch*** **[*Zahn 144*]**. Lectotype (here designated): two flowers, description and sketch of half-lip, and a fragment with one leaf and a watercolor of *Zahn 144* [mounted with a watercolour of a *Bull* specimen] W 4794! Tracing, in part, half-lip, by Schlechter from Herb. Reichenbach, AMES 24133! Isolectotypes: W 4536! W 9365!

Hierba epífita, simpodial, cespitosa, 19-50 cm de alto. **Raíces** basales, carnosas, gruesas, 1.5-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y algo lateralmente aplanados cerca del ápice, delgados, erectos, rectos, 17-45 x 0.2-0.4 cm; cubiertos en la base por vainas tubulares, no foliares, 25-44 mm de largo. **Hojas** 5-15, distribuidas a lo largo del tallo, articuladas, dísticas; vainas tubulares, finamente estriadas, 6-40 mm de largo; lámina angostamente lanceolada, aguda, diminutamente apiculada, coriácea, margen entero, extendido, 3-12 x 0.6-1.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, corta, plurianual, originando los racimos sucesivos a partir un mismo pedúnculo, arqueada, pauciflora, laxa, 3-6.5 cm de largo; pedúnculo 1.5-4 cm de largo, oculto casi en su totalidad por 4-5 brácteas, oblongo lanceoladas, con el ápice obtuso a subagudo, conduplicadas e imbricadas, 2.5-3.4 cm de largo; raquis delgado, recto. **Brácteas florales** mucho más cortas que el ovario, ovado triangulares, agudas, abrazadoras, 2-4 mm de largo. **Ovario** terete, delgado, algo dilatado detrás del perianto, no ornamentado, 20-32 mm de largo. **Flores** 5-6 [11], sucesivas, aunque llegando a estar abiertas en su totalidad de manera simultánea, resupinadas, carnosas, sépalos y pétalos amarillo verdosos con puntos pardo-rojizos en la superficie ventral; columna y labelo blancos, el ápice de la columna y en ocasiones el labelo algo teñidos de rosado; aparentemente sin fragancia. **Sépalos** extendidos, libres, angostamente triangular lanceolados, agudos a cortamente acuminados, 7-nervados, los márgenes enteros, extendidos, 11-26 x 2.5-4.5 mm. **Pétalos** extendidos, libres, triangular filiformes, acuminados, 1-nervados, márgenes enteros, extendidos, 10-25 x 0.3-0.7 mm. **Labelo** unido a la columna, trilobado, truncado en la base, 12-17 x 10-18 mm; bicalloso, los callos prominentes, laminares, lateralmente aplanados, paralelos; lóbulos laterales dolabriformes, margen largamente fimbriado-laciniado, 6-9 x 9-10 mm; lóbulo medio linear, en ocasiones con el ápice provisto de un par de cilios algo cirrosos, muy delgados, retrorsos, margen entero, 10-12.5 x 0.5-0.6 mm. **Columna** recta, delgada, 7-12 mm de largo. **Clinandrio** reducido (la antera expuesta en su totalidad), margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, semiovoides, alargados, lateralmente fuertemente comprimidos, desiguales en tamaño (el par interior más corto), caudículas suaves y lisas, ligeramente más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, ocupando 1/3 de la cavidad estigmática. **Nectario** penetrando 1/6 del ovario, no inflado, no ornamentado. **Cápsula** elipsoide; pedicelo terete, delgado, 12 mm de largo; cuerpo 20 x 7 mm; cuello apical 10 mm de largo, con el perianto persistente.

Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete at the base, somewhat laterally compressed towards the apex, thin, erect, straight; covered towards the base by non-foliar, tubular sheaths. **Leaves** 5-15, distributed throughout the stem, articulate, distichous; sheaths tubular, minutely striated; blade narrowly lanceolate, acute, minutely apiculate, coriaceous, margin entire, spreading. **Inflorescence** apical, racemose, short, pluri annual, successive racemes originating from the same peduncle, arching, lax, few-flowered; peduncle short, nearly totally hidden by 4-5, oblong-lanceolate, obtuse to subacute, conduplicate, imbricating bracts; rachis thin, straight. **Floral bracts** much shorter than the ovary, ovate-triangular, acute. **Ovary** terete, thin, somewhat dilated behind the perianth, smooth. **Flowers** 5-6[11], successive, though all may be open at one time, resupinate, fleshy, sepals and petals greenish yellow with reddish brown dots on the ventral surface; column and lip white, the apex of the column and the lip occasionally tinged pink; apparently without fragrance. **Sepals** spreading, free, narrowly triangular-lanceolate, acute to short acuminate, 7-veined, margins entire, spreading. **Petals** spreading, free, triangular-filiform, acuminate, 1-veined, margins entire, spreading. **Lip** united to the column, 3-lobed, base truncate; bicallose, the calli prominent, laminar laterally compressed, parallel; lateral lobes dolabriform, margin deeply fimbriate-lanceolate; midlobe linear, occasionally the apex provided with a pair of retrorse, somewhat cirrhose, very thin cilia. **Column** straight, thin. **Clinandrium-hood** reduced (the anther totally exposed), margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, semiovoid, elongate, strongly laterally compressed, unequal, the inner pair shorter; caudicles soft and smooth, slightly longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating 1/6th of the ovary, not inflated, smooth. **Capsule** ellipsoid; pedicel terete, thin, apical neck long, perianth persistent.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from Nicaragua, Costa Rica, Panama, Colombia, Ecuador and Peru; epiphytic, growing at [100] 600-1500 m altitude, most frequently at 600-1100. Flowering in September, November to March, May.

RECOGNITION: *Epidendrum criniferum* belongs to the Cristatum Group which is characterized by the sympodial, caespitose habit, many-leaved stems, apical racemose inflorescence with several large, imbricating bracts, and producing successive racemes over the years from the peduncle, and the Cristatum Subgroup, with generally greenish flowers, the lip with the margin of lateral lobes generally fimbriate-laciniate. The species is recognized by the relatively short plants (to 50 cm tall), with narrowly lanceolate leaves, the inflorescence shorter than the apical leaf, 3-6.5 cm long, with up to 11, greenish-yellow flowers, with reddish brown dots on the ventral surface of the sepals, the column and lip white, somewhat tinged with pink; the margins of the lateral lobes of the 3-lobed lip are deeply fimbriate-laciniate, and the linear midlobe occasionally with a pair of retrorse cilia at the apex. It closely resembles *Epidendrum rivulare* Lindl. from Cuba, Jamaica and the Dominican Republic, which has an elongate peduncle covered with imbricating bracts, and the flowers somewhat lighter colored, with the fimbriae of the lateral lobes of the lip face outwards rather than backwards. *Epidendrum cristatum* Ruiz & Pavón has taller plants, larger, many-flowered, nutant inflorescences, the 3-lobed lip with the apical margin of the lateral lobes erose to short-laciniate, the midlobe obcuneate with the apex bilobed, the lobes rectangular, divaricate, with the apical margin slightly dentate.

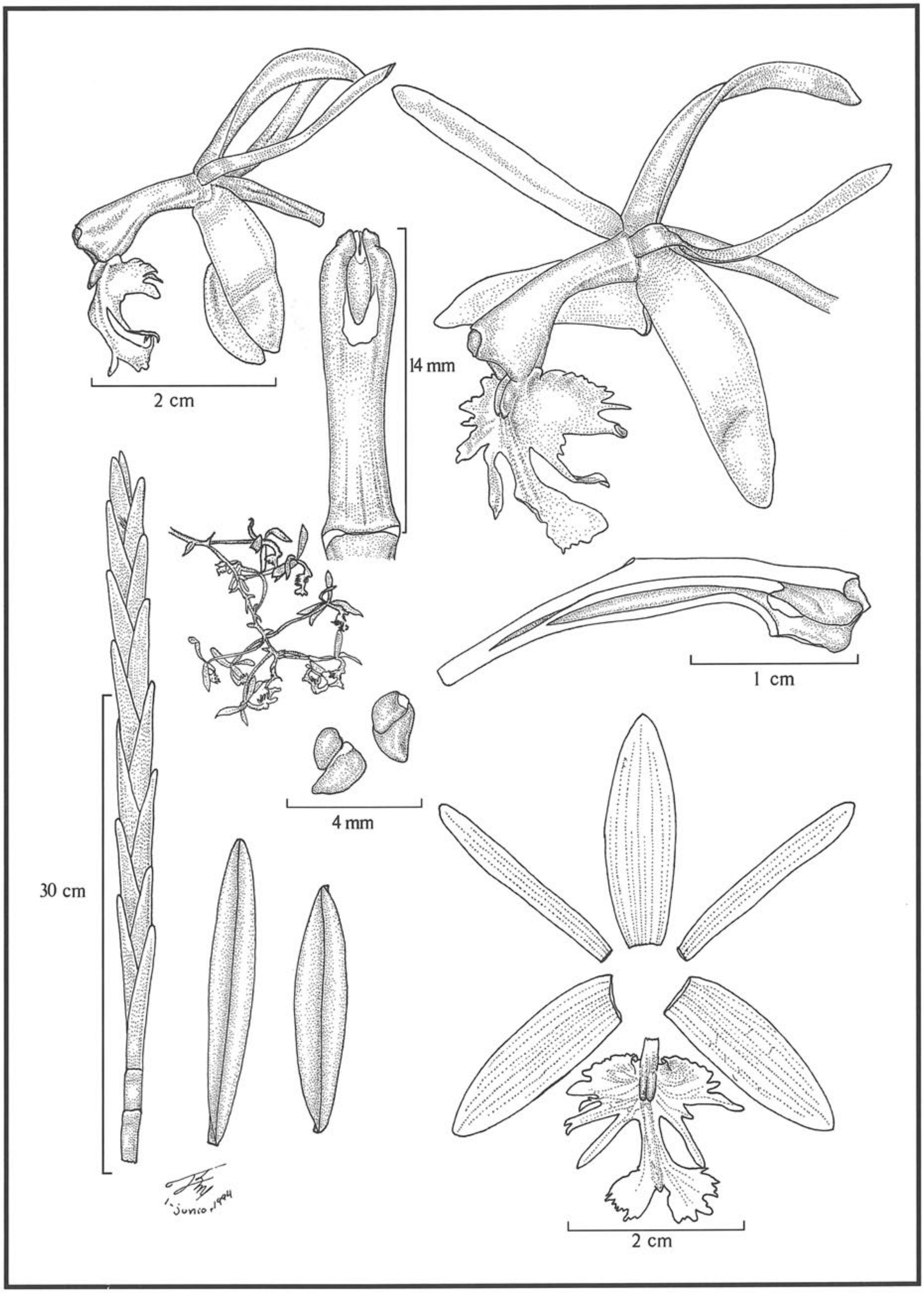


CONSERVATION STATUS: DD. Data deficient. Widespread but apparently locally scarce.

ETYMOLOGY: From the Latin *crinis*, hair, and *ferens*, carrying, bearing, in reference to the hair-like margins of the lateral lobes of the lip.

REFERENCES: Dodson, C. & D. Bennett, in C. Dodson, 1989. **Icon. Pl. Trop. series II**: pl. 0061; Escobar R., R. 1994. **Orquídeas Nativas de Colombia Vol. 5:** 766, photo 892, Medellín, Colombia; Hágsater, E. 2005. *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 292, San José, Editorial de la Universidad de Costa Rica. Hamer, F. in C. H. Dodson, 1982. **Icon. Pl. Trop. 8:** pl. 713; Hamer, F. 2001. *Orchidaceae* Juss., in Stevens, W. D., et al., *eds*., Flora de Nicaragua, **Monogr. Syst. Bot. Missouri Bot. Gard. 85(2):** 1683. Missouri Botanical Garden Press, St. Louis, Missouri, U.S.A; Misas, G. 2005. ***Orquídeas de la Serranía del Baudó, Chocó-Colombia***: 166-167. Corporación Capitalina de Orquideología, Bogotá, Colombia.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM CRISTATUM Ruiz & Pavón **Plate 1115**

EPIDENDRUM CRISTATUM Ruiz & Pavón, Syst. Veg. Fl. Peruv. Chil. 1: 243. 1798.

Type: PERU: [Huánuco:] Pozuzo, 1778-1788, ***Ruiz & Pavón s.n.*** Holotype [annotated by Carnevali and Ramírez]: MA! Isotypes: *Ruiz & Pavón 4/77*. F 712439! MA (x3)! (photo of one of the MA specimens: CNHM 29532 AMES!, F, MO! SEL!

Synonyms: *Epidendrum raniferum* Lindl., Gen. Sp. Orchid. Pl. 109. 1831. Type: MEXICO: Herb. Pavón, [***M. Sessé & J. M. Mociño s.n.***] Lectotype (here designated): *"Ophrys tigrina"* BM! Photo AMES 42429! Isotypes: *"Epidendrum racemosum"* BM! Photo AMES 42425! *Epidendrum rantierium* Lindl. ex Sánchez, Orq. Mex. 47. 1930.

Epidendrum raniferum Lindl. var *luteum* Lindl. Fol. Orch. Epidendrum 53, 1853. Type: GUYANA: Demerara, 7 IX 1851, ***Schomburgk 583 ex Hort. Loddiges***. Holotype: K-L! [mounted with watercolor]. *Epidendrum raniferum* Lindl. var *lutescens* Lindl. ex Broadw., Orchid. Rev. 34: 199. 1926.

Epidendrum calliferum Lem., Jard. Fleur. 4: misc. 65, 1854. Type: BRAZIL: Ins. Santa Catharina. Type: Illustration Jard. Fleur. 4: pl.414, 1854.

Epidendrum hexadactylum Barb. Rodr., Gen & Spec. Orch. Nov. 1: 56. 1877. Type: BRAZIL: Entre-Ríos, *Rodrígues t. 348* [colored illustration prepared for Icon. Orch. Brésil]. Holotype: Herb. Barb. Rodr. (destroyed). Lectotype (here designated): original illustration, 4: t. 23, AMES! Published in 1996 in Icon. Orch. Brésil 1: 286. 1996. Fl. Bras. 3(5): t. 29.

Epidendrum raniferum Lindl. var *hexadactylum* (Barb. Rodr.) Cogn., in Mart. Fl. Bras. 3(5): 99. 1898.

Epidendrum longovarium Barb. Rodr., Gen & Spec. Orch. Nov. 1: 57. 1877. Type: BRAZIL: [Minas Geraes] au Pico du Frade, serra de Caldas, ***Regnell ser III 2019***, [colored illustration prepared for Icon. Orch. Brésil, t. 348]. Holotype: Herb. Barb. Rodr. (destroyed). Isotype: P! [Original illustration, 4: t. 22, AMES! Copy of illustration prepared for Icon. Orch. Brasil, t. 348, K! Illustration published in 1996 in Icon. Orch. Brésil 1: 286. 1996. Fl. Bras. 3(5): t. 28.]

Epidendrum tigrinum Sessé & Mociño., Fl. Mex. 2: 204. 1894. [the first description of two on the same page] Type: Mexico: Veracruz: supra arbores montium calidorum Nov. Hisp. ut Cordovae viscinis, ***M. Sessé & J. M. Mociño 4327***. Lectotype (here designated): MA 600411! (photo F!)

Epidendrum raniferum Lindl. var *obtusilobum* Cogn., in Mart., Fl. Bras. 3(5): 99. 1898. Based on *Epidendrum raniferum* (B) Lindl., Folia Orch., Epidendrum 53. 1853. Type: GUYANA: British Guiana, Demerara, 1837, ***Schomburgk 424***. Holotype K-L! Isotypes: FI! Gx2! K-Benth! L! P! W! [not specimen at E!]

Epidendrum raniferum Lindl. var *loefgreni* Cogn. in Mart. Fl. Bras. 3(5): 100, tab. 6, fig. 2. 1898. Type: BRAZIL: São Paulo, *Com. Geogr. e Geol. Prov. S. Paulo 2867*, Holotype: BR!

Epidendrum bathyschistum Schltr., Repert. Spec. Nov. Regni Veg. Beih. 6: 36. 1919. Type: VENEZUELA: Federal-District: Caracas, ***Moritz 629.*** Holotype: B (destroyed) Lectotype* (here designated): tracing AMES!

Epidendrum validum Schltr., Repert. Spec. Nov. Regni Veg. Beih. 9: 95. 1921. Type: PERU: Cajamarca: im Tal des Flusses Tabaconas, 900-1000 m, April 1912, ***A. Weberbauer 6155***. Holotype: B (destroyed). Isotype: F! illustration of flower published in Mansfeld, Repert. Sp. Nov. Regni Veg. Beih. 57, t. 122, nr. 479, 1929.

Epidendrum alexandri Schltr. Anex. Mem. Inst. Butantan, Secc. Bot. 1(4): 60. t.13, 1922. Type: BRAZIL: Sao Paulo: Morro das Pedras, Iguape, 20 m, Dec. 1918, ***A. C. Brade 7801***. Holotype: B (destroyed), Isotypes: AMES 30641! HB! R! US!

Hierba epífita, litófita o terretre, simpodial, cespitosa, 70-240 cm de alto. **Raíces** basales, carnosas, 2.5-4 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y algo lateralmente aplanados cerca del ápice, erectos, rectos, 45-200 x 0.45-1.1 cm. **Hojas** 13-48, distribuidas a lo largo del tallo, articuladas, dísticas; vainas tubulares, finamente estriadas, 20-38 mm de largo; lámina angostamente elíptico lanceolada, aguda, diminutamente apiculada, coriácea, margen entero, extendido, 9-22 x 1.3-3.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, plurianual, originando los racimos sucesivos a partir un mismo pedúnculo, arqueado-nutante, generalmente multiflora, densa, 25-40 cm de largo; pedúnculo 11-18 cm de largo; oculto en su totalidad por 6-10 brácteas, prominentes, oblongo lanceoladas, con el ápice redondeado, conduplicadas e imbricadas, 4.5-9.2 cm de largo; raquis recto. **Brácteas florales** mucho más cortas que el ovario, ovado-triangulares, agudas a acuminadas, abrazadoras, 4-9 mm de largo. **Ovario** terete, delgado, ligeramente dilatado detrás del perianto, no ornamentado, 30-50 mm de largo. **Flores** 14-50, simultáneas, resupinadas, carnosas, sépalos y pétalos amarillos a verde pálido con puntos rojizos; ápice de la columna y el labelo de color blanco con verde pálido, en ocasiones algo teñidos de rosado; aroma frutal, más intenso al medio día. **Sépalos** extendidos, libres, angostamente oblongo obovados, obtusos, 5-nervados, las nervaduras ramificadas desde la base dando la apariencia de ser 9-nervados, los márgenes enteros, extendidos, [15-16] 18-25 x 5-7.7 mm; los laterales ligeramente oblicuos. **Pétalos** extendidos, libres, espatulados, redondeados, 3-nervados, márgenes enteros, extendidos, [14-15] 17-24 x 3-5 mm. **Labelo** unido a la columna, trilobado, ligeramente cordado en la base, 8-12.5 x 10-13 mm; bicalloso, los callos prominentes, laminares, lateralmente aplanados, paralelos; disco unicarinado, la carina alargada hasta el ápice del lóbulo medio; lóbulos laterales dolabriformes, margen eroso a eroso-laciniado, 5.3-7 x 6-8 mm; lóbulo medio obcuneado, el ápice bilobado formando un par de lóbulos rectangulares, truncados, algo divaricados, margen apical ligeramente dentado, 5-7.2 x 5-9 mm. **Columna** ligeramente arqueada, delgada, 11-14 mm de largo. **Clinandrio** reducido (la antera expuesta en su totalidad), margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, semiovoides, alargados, lateralmente fuertemente comprimidos, desiguales en tamaño (el par interior más corto), caudículas suaves y lisas, ligeramente más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, ocupando ¼ de la cavidad estigmática. **Nectario** penetrando 1/6 del ovario, no inflado, no ornamentado. **Cápsula** elipsoide; pedicelo terete, delgado, 25-30 mm de largo; cuerpo 30-38 x 12-18 mm; cuello apical 15-21 mm de largo.

Epiphytic, lithophytic or terrestrial, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete at the base, somewhat laterally compressed towards the apex, erect, straight. **Leaves** 13-48, distributed throughout the stem, articulate, distichous; sheaths tubular, minutely striated; blade narrowly elliptic-lanceolate, acute, minutely apiculate, coriaceous, margin entire, spreading. **Inflorescence** apical, racemose, pluri-annual, successive racemes originating from the same peduncle, arching-nutant, generally densely many-flowered; peduncle long, totally hidden by 6-10 prominent, oblong-lanceolate, conduplicate, imbricating bracts, the apex rounded; rachis straight. **Floral bracts** much shorter than the ovary, ovate-triangular, acute to acuminate. **Ovary** terete, thin, slightly dilated behind the perianth, smooth. **Flowers** 14-50, simultaneous, resupinate, fleshy, sepals and petals yellow to pale green with reddish spots; apex of the column and lip white with pale green, occasionally tinged with pink; fragrance fruit-like, more intense at mid-day. **Sepals** spreading, free, narrowly oblong-obovate, obtuse, 5-veined, the veins branching from the base so as to appear 9-veined, the margins entire, spreading; the lateral sepals slightly oblique. **Petals** spreading, free, spatulate, rounded, 3-veined, margins entire, spreading. **Lip** united to the column, 3-lobed, base slightly cordate; bicallose, the calli prominent, laminar, laterally compressed, parallel; disc one-keeled, the keel reaching the apex of the midlobe; lateral lobes dolabriform, margin erose to erose-laciniate; midlobe obcuneate, the apex bilobed, forming a pair of rectangular, truncate, somewhat divaricate lobes, apical margin slightly dentate. **Column** slightly arching, thin. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, semiovoid, elongate, strongly laterally compressed, unequal, the inner pair shorter, caudicles soft and smooth, slightly longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating 1/6th of the ovary, not inflated, smooth. **Capsule** ellipsoid; pedicel terete, thin, long, apical neck long.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread from northern Mexico (Tamaulipas) through Mesoamerica to Brazil and Bolivia. Epiphytic, lithophytic or terrestrial, found at up to 1500 m altitude, mainly at 50-1000 m. Flowering from March to July, November-December.

RECOGNITION: *Epidendrum cristatum* belongs to the Cristatum Group which is characterized by the sympodial, caespitose habit, many-leaved stems, apical racemose inflorescence with several large, imbricating bracts, and producing successive racemes over the years from the peduncle, and the Cristatum Subgroup, with generally greenish flowers, the lip with the margin of lateral lobes generally fimbriate-laciniate. The species is recognized by the tall plants, to 2.4 m high, the narrowly elliptic-lanceolate leaves, long, nutant, racemose inflorescence (25-40 cm), the sepals and petals yellow to pale green with reddish spots, the apex of the column and the lip white and pale green, occasionally somewhat tinged pink, the 3-lobed lip with the apical margin of the lateral lobes erose to erose-laciniate, the midlobe obcuneate with the apex bilobed, the lobes rectangular, divaricate, with the apical margin slightly dentate. *Epidendrum criniferum* Rchb.f. has shorter plants, fewer flowers, the margins of the lateral lobes of the 3-lobed lip are deeply fimbriate-laciniate, and the linear midlobe occasionally with a pair of retrorse cilia at the apex.



*NOTE: The Vienna Code, (Art. 37.4) does not permit the use of illustrations as type of a name of a new species after 1 January 2007. However this lectotipification refers to a previously validly published new species, so the code does not apply.

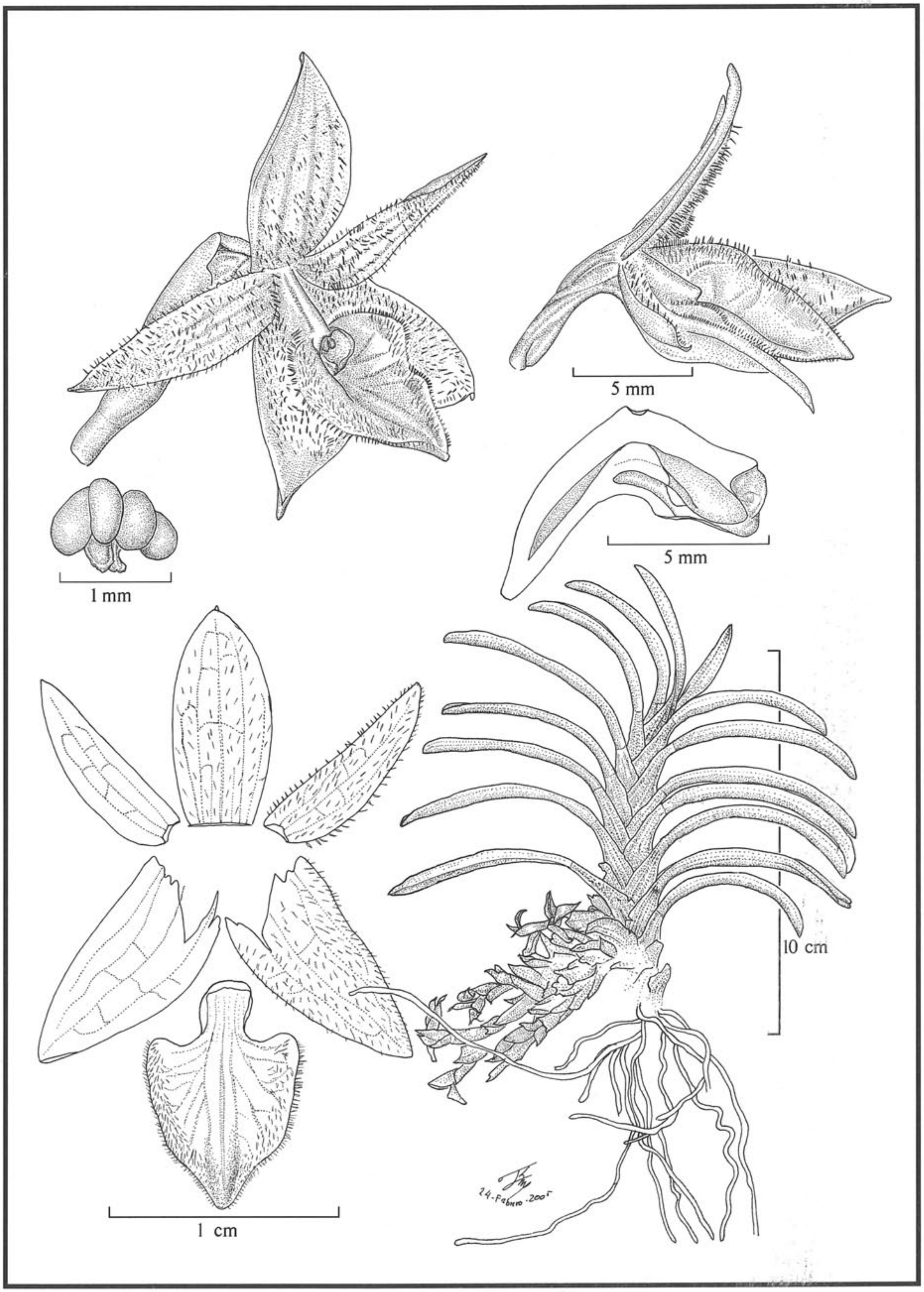
CONSERVATION STATUS: DD. Though very widespread, and large the species is highly desirable in horticulture, and thus often collected.

ETYMOLOGY: From the Latin *crista*, crest, cock's comb, in reference to the deeply erose-laciniate lip.

REFERENCES: Ames, O., F.T., Hubbard, and C. Schweinfurth, 1936, **The Genus Epidendrum in the United States and Middle America**: 166; Ames, O. & D.S. Correll, 1952, **Orchids of Guatemala.** 327; Bennett, D.E. & E.A.Christenson in E.A.Christenson,1993, *Epidendrum cristatum* in Icon. Orch. Peruv. pl. 44; Broadway, W.E., 1926, Trinidad Orchids in **The Orchid Review**, 34: 199; Carnevali, G. & I. Ramírez-Morillo in Steyermark J. A. et. al., 2003, **Flora of the Venezuelan Guayana: Epidendrum:** 336; Dunsterville, G.C.K. & L.A. Garay, 1979, **Orchids of Venezuela, an Illustrated Field Guide,** Harvard University Printing, p. 217; Espejo, S.A. & A.R.López, 1997, **Las Monocotiledóneas Mexicanas, Una Sinopsis Florística,** Lista de Referencia, Parte VII. Orchidaceae (1): 55; Escobar R. 1994, **Orquídeas Nativas de Colombia Vol. 5:** p. 762, photo 885, Medellín, Colombia; Foldats, E., 1970, **Flora de Venezuela (Orchidaceae):** Tercera parte, vol. XV: 221; García-Cruz, J. and L.Sánchez, 1999, **Flora de Veracruz**, Orchidaceae II: *Epidendrum:* 87-89; Hágsater, E., 2005, *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 294, San José C.R. Editorial de la Universidad de Costa Rica; Hamer, F., 2001, *Orchidaceae* Juss., in Stevens, W. D. et al., *eds*., Flora de Nicaragua, **Monogr. Syst. Bot. Missouri Bot. Gard.** 85(2): 1692. Missouri Botanical Garden Press, St. Louis, Missouri, U.S.A.; McLeish, I., N. R. Pearce, and B. R. Adams, 1995. **Native Orchids of Belize**: 184, photo 158; Hamer, F., 1982, **Icon. Pl. Trop. 8:** pl. 732; Schultes, R. E., 1960, **Native Orchids of Trinidad & Tobago (Orchidaceae):** 103-104; Schweinfurt, C., 1944, **Bot. Mus. Leafl. Harv. Univ.** 11(8): 222; Schweinfurt, C., 1959, **Orchids of Peru**: 429; Soto, M., et al., 2007, **Orchids of Mexico**, Digital Catalogue: fig. 0398, México, Instituto Chinoín; Toscano de Brito, A. L. V. & P. Cribb, 2005, **Orquídeas da Chapada Diamantina:** 146; Williams, L.O., 1951, **Orchids of Mexico:** 154; Wright, Montes de Oca, 1964, **Hummingbirds and Orch., Mex.:** 16, pl. 14.

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Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM DASYANTHUM Hágsater **Plate 1116**

EPIDENDRUM DASYANTHUM Hágsater, *comb. et nom. nov.*

Basionym: *Takulumena vazquezii* Szlach., Mytnik, A. Rom. & Marg., Orchidee (Hamburg) 57(3): 326. 2006. Type: Ecuador, near Loja, in lower montane forest, epiphytic on moss-covered branch, November 2005; ***D. Szlachetko, Kusibab & Mendoza s.n.*** Holotype: UGDA-DLSz, (in spirit).

Hierba epífita, monopodial, hasta de 6 cm de alto. **Raíces** basales, carnosas, 0.7-1 mm grosor. **Tallos** sencillos, erectos, lateralmente aplanados, completamente cubiertos por las vainas foliares, ocasionalmente se produce un tallo adicional de cerca de la base pero arriba de las inflorescencias, 1.5-6 cm de largo. **Hojas** 6-16, distribuidas a lo largo del tallo, dísticas en un solo plano, imbricadas, articuladas; vainas tubulares, finamente estriadas, verde claro, 7-15 mm de largo; lámina linear, obtusa, diminutamente apiculada, rugosa, conduplicada y arqueada en posición natural, coriácea, verde oscuro, margen entero, papiloso; 1-7.5 x 0.4-0.6 cm. **Bráctea espatácea** ausente. **Inflorescencia** lateral, producida de cerca de la base del tallo, rastrera, colgante, florece durante varios años, hasta de 5 cm de largo; completamente cubierta por brácteas, de segmentos sucesivos, ramificados; cada segmento de varios entrenudos, cada nudo con una bráctea ovada, en ocasiones tubular en la base, aguda a cortamente acuminada, estriada, escariosa, 7-11 mm de largo; el nuevo segmento se produce de la parte superior del último entrenudo. **Brácteas florales** semejantes a las del escapo, más largas que el ovario, tubulares, acuminadas, 9-10 mm de largo. **Flores** solitarias, se produce una sola en cada segmento, no resupinadas, de color rosa salmón a rojizas, el disco del labelo más oscuro; sin datos de fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, 6 mm de largo. **Sépalos** entreabiertos, libres, carnosos, la superficie ventral densamente pubescente, agudos a acuminados, margenes enteros, extendidos; 9-13 x 4-6 mm; el **dorsal** angostamente ovado, 5-nervado; los **laterales** oblicuamente triangular ovados, 4-nervados. **Pétalos** extendidos, libres, angostamente lanceolados, ápice agudo a acuminado, 3-nervados, superficie ventral densamente pubescente, margenes extendidos, ciliados; 9-11 x 2.5-3.5 mm. **Labelo** unido a la columna, cordiforme a subtriangular, carnoso, ápice triangular redondeado, los lados erectos abrazando el ápice de la columna sin cubrirla; ecalloso, con una carina baja y roma a lo largo del centro, superficie ventral densamente ciliada hacia los márgenes; 7-10 x 6-9 mm. **Columna** corta, gruesa, recta, 4-5 mm de largo. **Clinandrio** reducido, margen entero. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando la mitad de la cavidad estigmática. **Nectario** poco profundo, apenas penetrando ligeramente el ovario, liso. **Antera** no vista. **Polinios** 4, obovoideos; caudículas suaves y granulosas, ligeramente más largas que los polinios. **Cápsula** elipsoide; pedicelo y cuello apical obsoletos, cuerpo 21 x 13 mm.

Epiphytic, monopodial **herb. Roots** basal, fleshy, thin. **Stems** simple, erect, laterally compressed, completely covered by foliar sheaths, occasionally producing an additional stem near the base but above the inflorescences. **Leaves** 6-16, distributed throughout the stem, distichous, imbricating, articulate; sheaths tubular, minutely striated, imbricating, light green; blade linear, obtuse, minutely apiculate, rugose, conduplicate and arching in natural position, coriaceous, dark green, margin entire, papillose. **Inflorescence** lateral, produced from near the base of the stem, creeping-pendent, flowering during several years; completely covered by bracts, made of successive segments, branching; each segment of various internodes, each node with an ovate bract, sometimes tubular at the base, acute to short acuminate, striated, scarious; the new segment produced from the upper part of the last internode. **Floral bracts** similar to those of the peduncle, longer than the ovary, tubular, acuminate. **Flowers** solitary, a single one produced from each segment, non-resupinate, pink-salmon to reddish, the disc of the lip darker. **Ovary** terete, thin, not inflated, unornamented. **Sepals** partly spreading, free, fleshy, the ventral surface densely pubescent, acute to acuminate, margins entire, spreading; the dorsal sepal narrowly ovate, 5-veined; the lateral sepals obliquely triangular-ovate, 4-veined. **Petals** spreading, free, narrowly lanceolate, apex acute to acuminate, 3-veined, ventral surface densely pubescent, margins spreading, ciliate. **Lip** united to the column, cordiform to subtriangular, fleshy, apex triangular-rounded, the sides erect, embracing the apex of the column without covering it; ecallose, with a low-rounded keel running down the middle, ventral surface densely ciliate towards the margins. **Column** short, thick, straight. **Clinandrium-hood** reduced, margin entire. **Rostellum** subapical, slit. **Nectary** shallow, barely penetrating the ovary, unornamented. **Pollinia** 4, obovoid; caudicles short and granulose, slightly longer than the pollinia. **Capsule** ellipsoid; pedicel and apical neck obsolete.

OTHER SPECIMENS: COLOMBIA: Antioquia: km 87 Medellín-Yarumal, llanos de Cuiba, 2750 m, 12 IX 1984, *Dodson 15263*, MO! **Cundinamarca:** Chocontá, El Sisga, parte alta de la Represa, 2700-2900 m, 14 I 1962, *García-Barriga 17385*, AMES! COL! NY! **ECUADOR: Carchi:** Valle de Maldonado, km 67 on road Tulcán-Maldonado, 2400 m, 20 V 1973, *Holm-Nielsen 6153*, AAU! **Imbabura:** road to Selva Alegre, 2800 m, 15 VII 1983, *Hirtz 1032*, SEL! **Napo:** Cuyuja, 2000, 17 VI 1983, *Dodson 13993*, MO! km 72 on road Quito to Baeza at Cuyuja, 2450 m, 30 VI 1986, *Dodson 16524*, MO! Cuyuja, 2450 m, 27 VII 1986, *Dodson 16569*, MO! QCNE! Cuyuja, 2450 m, 1 IX 1986, *Dodson 16610*, MO! Papallacta, 2500 m, 29 X 1979, *Luer 4449*, SEL! **Loja:** Loja-Saraguro, 2500 m, 3 II 1987, *Hirtz 3097*, MO! Cerro Villonaco, 2500-2900 m, 24 IV 1987, *van der Werff & W. Palacios 8952Q*, MO! **Pichincha:** km 16 camino de Calacalí, pasando Hda. Gallopelado, 2650 m, 4 IV 1985, *Dodson 15777A*, MO! near Río Silante and Finca Canchacato, 2000 m, 28 X 1979, *Luer 4416*, SEL! **Zamora-Chinchipe:** Yangana to Valladolid, 2500-3000 m, IV 1985, *Dalessandro 397*, RPSC! **PERU: Amazonas:** Cordillera de Colón, SE of La Peca, 8050 ft, 6 X 1978, *Barbour 3765*, MO! Near Molinopampa, 2300 m, 1 VII 1979, *Koeniger 25/4*, SEL! Quelap, *Vidal Senege 4869*, P! (Illustration voucher.)



OTHER RECORDS: VENEZUELA: Without locality data, 2001, *Carnevali s.n.*, digital photo, AMO! **ECUADOR:** Hort. Ecuagenera, *Medina sub Hágsater 13878*, spirit, AMO! **Loja:** Loja-Saraguro, 2500 m, 3 II 1987, *Hirtz 3097*, slide of live flowers, AMO! **Pichincha:** Without locality data, 2004, *Douglas s.n.*, digital photo, AMO!

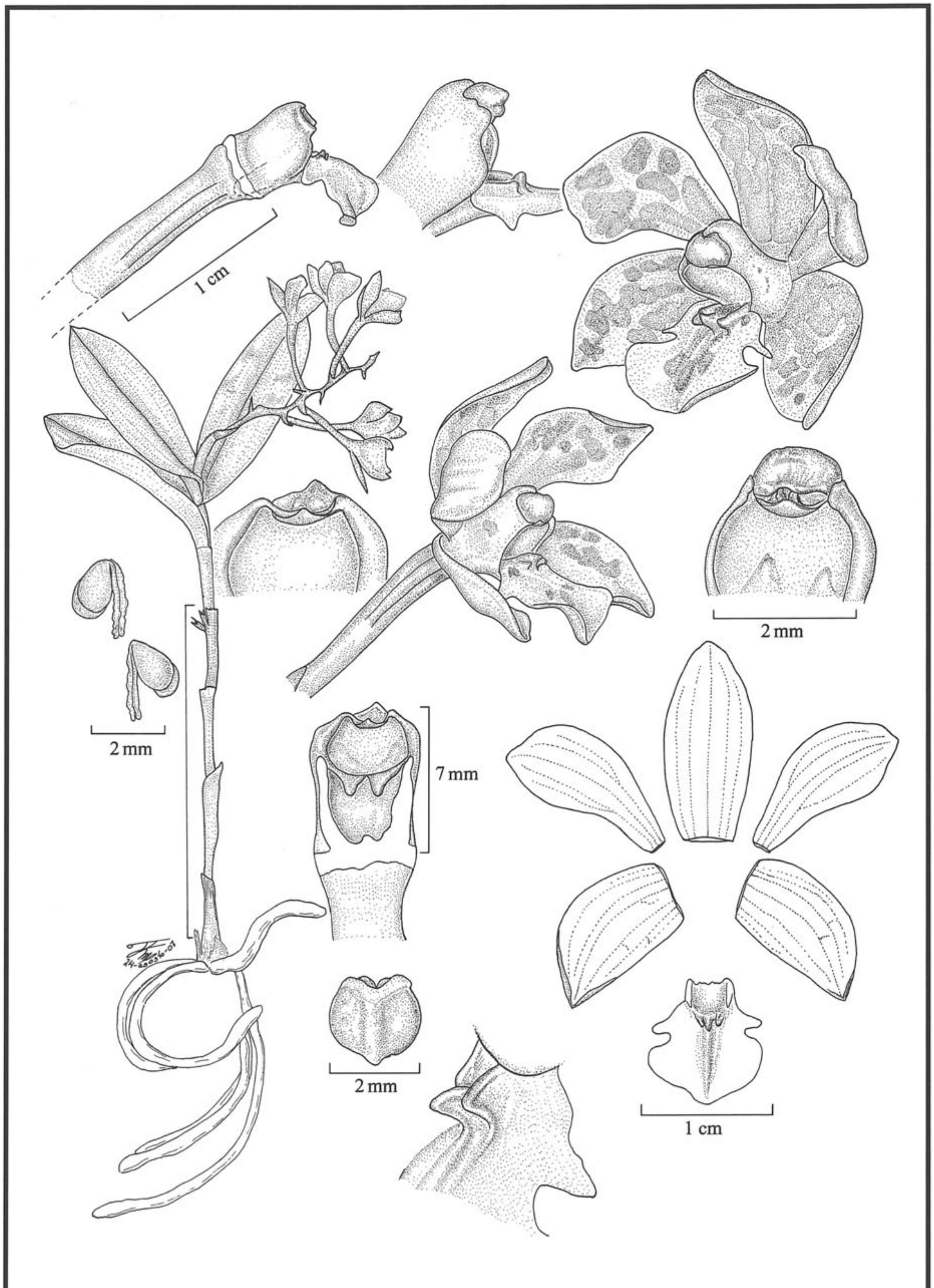
OTHER UNCONFIRMED SPECIMENS: VENEZUELA: Táchira: La Fundación, Río Quinimarí, 2700 m, 16 V 1951, *Renz 7019*, RENZ! **PERU:** North Peru, hort. *A. Campoverde sub Fernández 419*, USM!

DISTRIBUTION AND ECOLOGY: Ranging from northern Colombia and western Venezuela to northern Peru, mainly along the eastern ridge of the Andes. Epiphytic in cloud forest and elfin forest, 2300-2900 m. Flowering throughout the year.

RECOGNITION: *Epidendrum dasyanthum* belongs to the *Takulumena* group which is recognized by the small, *Vanda*-like plants, with simple, imbricating, distichous leaves, and a lateral complicated inflorescence, producing new, single-flowered segments over several years. The species is recognized by the salmon-pink to reddish flowers, the floral segments strongly pillose ventrally, sepals 9-13 mm long. *Epidendrum sophronitoides* F.C. Lehm. & Kränzl. has greenish brown to yellowish green flowers, the glabrous segments acuminate. *Epidendrum rhodovandoides* Hágsater has small plants, cardinal-red to reddish magenta flowers, sepals 4-5.5 mm long, the floral segments ventrally glabrous (or rarely with scarce, short trichomes on the ventral surface). *Epidendrum psilosepalum* Hágsater & E. Santiago has somewhat short plants, reddish yellow-green flowers, the sepals glabrous, petals and lip strongly pillose, with medium-sized flowers, the sepals 7-8 mm long.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek δασυς, shaggy, thickly or markedly hairy, ανθος, flower, in reference to the thickly pillose segments of the flower.



EPIDENDRUM DENTILOBUM Ames, F.T.Hubb. & C.Schweinf. **Plate 1117**

EPIDENDRUM DENTILOBUM Ames, F.T.Hubb. & C.Schweinf., Bot. Mus. Leafl. 3(5): 69. 1935.

Type: PANAMA: range of hills back of San Juan, upper reaches of the Chagres River, about sea level, ***C. W. Powell 342***. Holotype: AMES 27145!

Synonym: *Epidendrum begotii* V.P. Castro & Da Silva, [as *E. bogotti*] Bol. CAOB 95(2-4): 9-10. 1995. BRASIL: Pará: Ourém; Fazenda Batuíra, 10 m, 12 April 1994, ***João Baptista Ferreira da Silva e André Begot s.n.*** Holotype: MG.

Hierba epífita, simpodial, cespitosa, erecta, 20-30 cm de alto. **Raíces** sencillas, basales, carnosas, gruesas, 4-5 mm de grosor. **Tallos** sencillos, tipo caña, teretes, gruesos, rectos, 10-25 x 0.2-0.3 cm; cubiertos en la mitad basal con vainas (no foliosas), tubulares, escariosas y fibrosas con el tiempo, 30-35 mm de largo. **Hojas** 4-7, distribuidas en la mitad apical del tallo, articuladas, dísticas, desiguales en tamaño, las basales más cortas; vainas tubulares, 10-40 mm de largo; lámina oblongo elíptica a elíptico lanceolada, subcoriácea, subaguda, margen entero, extendido, 6.3-12 x 1.3-2.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa a paniculada, arqueada, pauciflora, laxa, corta, 2-5 cm de largo; pedúnculo delgado, corto, 4-7 mm de largo; raquis delgado, fractiflexo. **Brácteas florales** mucho más cortas que el ovario, triangular ovadas, agudas a acuminadas, abrazadoras, 3-7 mm de largo. **Ovario** delgado, no inflado, algo dilatado justo detrás del perianto, estriado, 15-25 mm de largo. **Flores** 3-7, simultáneas, resupinadas, sépalos y pétalos amarillo verdosos con manchas marrón, columna y labelo blanquecino con escasas manchas marrón, callo amarillo; sin datos de fragancia. **Sépalos** entreabiertos, libres, carnosos, márgenes enteros, extendidos, 9-15 x 4-6.5 mm; el **dorsal** oblongo elíptico, subagudo, 5-nervado, fuertemente cóncavo; los **laterales** ovado elípticos, agudos, dorsalmente carinados, 5-7 nervados, oblicuos, ligeramente cóncavos. **Pétalos** entreabiertos, libres, espatulado oblanceolados, unguiculados, subagudos, 3-nervados, márgenes enteros, extendidos, 10-14 x 3.5-6 mm. **Labelo** unido a la base de la columna, trilobado, cuneado en la base, formando un istmo angosto entre los lóbulos laterales y el lóbulo medio, margen entero, 6.5-7 x 7-8 mm; tricalloso, los callos prominentes, muy cortos, el central corniculiforme; disco provisto de 1 a 3 quillas, las quillas laterales bajas, cortas, la quilla central, baja pero evidente, prolongándose hasta cerca del ápice de la lámina; lóbulos laterales pequeños, angostamente triangulares, agudos, divaricados, 2 x 2 mm; lóbulo medio semicircular-flabelado, anchamente redondeado, diminutamente apiculado, 5 x 8 mm. **Columna** corta, gruesa, cónica, formando una cavidad amplia entre el labelo y la columna, con un par de dientes laterales subagudos a cada lado arriba de los callos, 7 mm de largo. **Clinandrio** reducido, el borde apical formando un diente carnoso, algo incurvado. **Antera** subovoidea, 4-locular. **Polinios** 4, obovoides, comprimidos lateralmente; caudículas laminares, ligeramente más largas que los polinios. **Rostelo** laminar, transversal. **Lóbulos laterales del estigma** prominentes, ocupando ½ de la cavidad estigmática. **Nectario** no visto. **Cápsula** [probablemente inmadura] angostamente elipsoide; cuerpo, ca. 28 x 7 mm; pedicelo, 14 mm de largo; cuello apical corto, con el perianto persistente, 3 mm de largo.

Epiphytic, sympodial, caespitose, erect **herb. Roots** simple, basal, fleshy, thick. **Stems** simple, cane-like, terete, thick, straight; the basal half covered by non-foliaceous, tubular, scarious sheaths, becoming fibrous with time. **Leaves** 4-7, distributed along the apical half of the stem, articulate, distichous, unequal in size, the basal leaves shorter; sheaths tubular; blade oblong-elliptic to elliptic-lanceolate, subcoriaceous, apex subacute, margin entire, spreading. **Inflorescence** apical, flowering only once, racemose to paniculate, arching, lax-, few-flowered, short; peduncle thin, short; rachis thin zigzag. **Floral bracts** much shorter than the ovary, triangular-ovate, acute to acuminate, amplexicaul. **Ovary** thin, somewhat dilated behind the perianth, striated. **Flowers** 3-7, simultaneous, resupinate, sepals and petals greenish yellow with reddish brown spots, column and lip white with scarce reddish brown spots, with a yellow blotch covering the calli and basal keel yellow. **Sepals** partly spreading, free, fleshy, margins entire, spreading; the dorsal sepal oblong-elliptic, subacute, 5-veined, strongly concave; the lateral sepals ovate-elliptic, acute, dorsally carinate, 5-7-veined, oblique, slightly concave. **Petals** partly spreading, free, spatulate-oblanceolate, unguiculate, subacute, 3-veins, margins entire, spreading. **Lip** united to the base of the column, 3-lobed, base cuneate, forming a narrow isthmus between the lateral lobes and the midlobe, margin entire; tricallose, the calli prominent, laminar, short, with a central, horn-shaped, short keel, slightly forward of the calli and similar to them; disc provided with 1-3 keels, the lateral keels very low, short, the mid-keel evident, low, reaching the apex of the midlobe; lateral lobes **small**, narrowly triangular, acute, divaricate; midlobe semicircular-flabellate, widely rounded, minutely apiculate. **Column** short, thick, conical, forming a wide cavity with the lip, with a pair of lateral, subacute teeth on each side at the apex, above the calli. **Clinandrium-hood** reduced, fleshy, with a prominent, dorsal, somewhat incurved tooth. **Anther** subovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles laminar, slightly longer than the pollinia. **Rostellum** laminar, transverse. **Capsule** [probably immature] narrowly ellipsoid, with a long basal pedicle and short apical neck.

OTHER SPECIMENS: PANAMA: Panamá: Cerro Jefe, Coffee Plantation, 700 m, 15 VII 1969, *Dressler 3672*, Herb. Dressler! flower in spirit and slide, AMO! (Illustration voucher).

OTHER RECORDS: PANAMA: Colón: Piñas, W of Colón, IX 1971, *Dressler s.n.*, slide, AMO! **COLOMBIA: Chocó:** Bahía Solano, Quebrada Resaquita, 50 m, *Misas 275*, xerox of illustration, slide and spirit, AMO! **FRENCH GUYANA: Sinnamary:** a proximité de la piste de St. Elie, *Veyret 651*, spirit and color photo, AMO!



DISTRIBUTION AND ECOLOGY: Ranging from Central Panama, the Chocó in Colombia and to northern Brazil along the Atlantic lowlands, epiphyte, from sea level to 700 m altitude. Flowering in April, July to September.

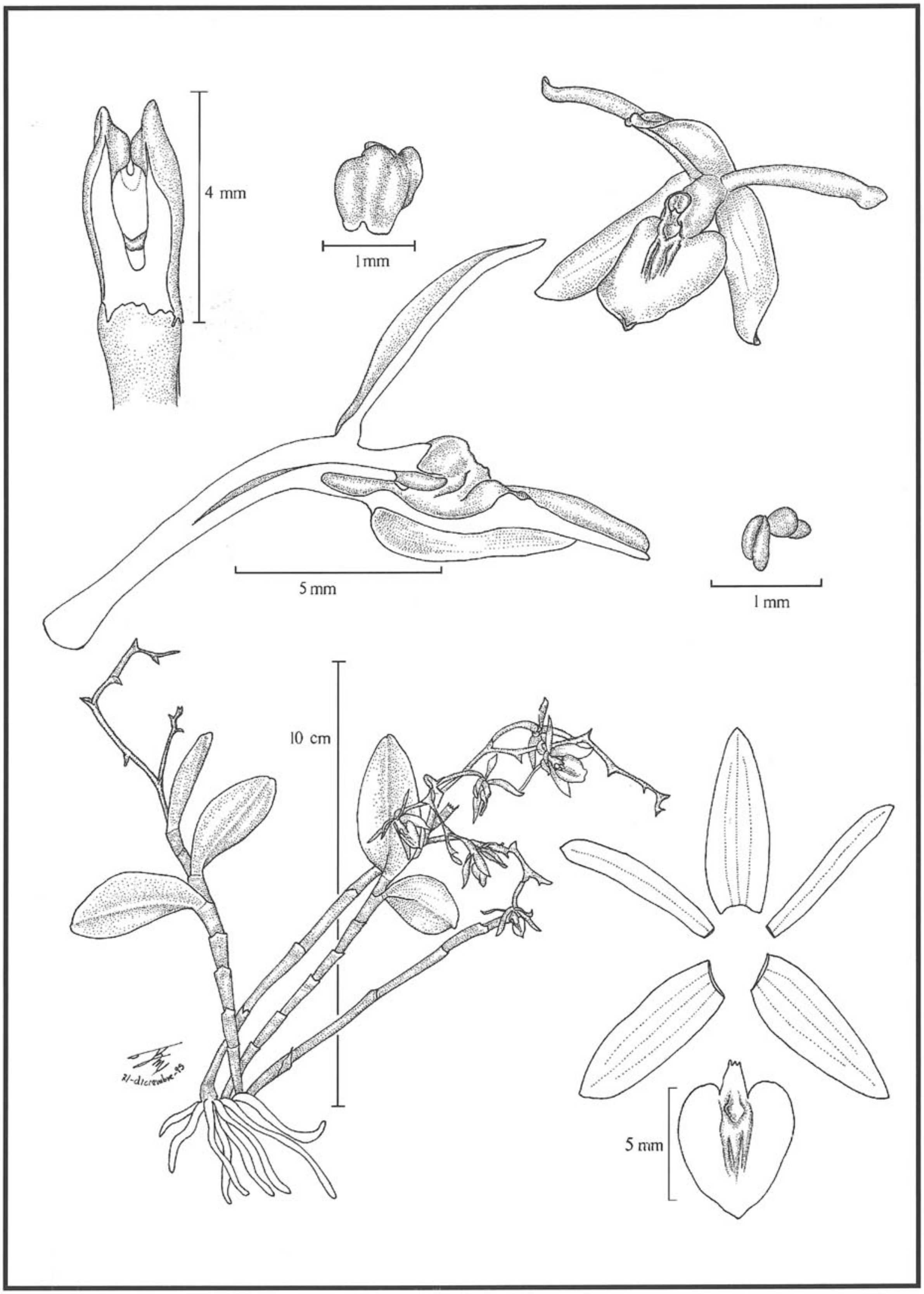
RECOGNITION: *Epidendrum dentilobum* is recognized by the caespitose habit, with several fleshy leaves along the apical half of the thick stem, the racemose to paniculate, apical, few-flowered inflorescence, the flowers greenish-yellow with reddish brown spots, with the lip only partly united to the short, conical column and forming a wide cavity, the lip 3-lobed, with the lateral lobes small and triangular, and the midlobe semicircular, flabellate, and the base of the lip with two short calli and a horn-shaped, short keel in the middle, similar to the calli. We cannot place the species close to any other. The plant habit is superficially similar to *Epidendrum coronatum* Ruiz & Pavón, but that species has larger, more numerous, ivory-white flowers with the lateral lobes of the lip dolabriform and much larger than the midlobe. The flowers are somewhat reminiscent of *Prosthechea vespa* (Vell.) W.E. Higgins, due to the brightly spotted sepals and petals, and the fleshy, toothed clinandrium-hood, though that species has long thin pseudobulbs with apical leaves, and an erect, simple inflorescence with non-resupinate flowers.

CONSERVATION STATUS: DD. Data deficient. Extremely rare.

ETYMOLOGY: From the Latin *denti-*, toothed, and *lobum*, lobe, in reference to the lateral lobes of the lip which are small and narrowly triangular.

REFERENCES: Misas, G. 2005. ***Orquídeas de la Serranía del Baudó, Chocó-Colombia***: 177. Corporación Capitalina de Orquideología, Bogotá, Colombia; Castro, V.P., & J.B. Fernandes da Silva, 1995. *Novo Epidendrum do Estado do Pará*, **Bol. CAOB** 95: (2-4): 9-10.

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Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM DIFFUSUM Sw.

Plate 1118

EPIDENDRUM DIFFUSUM Sw., Prodr. Veg. Ind. Occ. 121. 1788.

Type: Jamaica: Without locality, ***Swartz s.n.*** Lectotype (here designated): W 26526! [No Swartz specimen of this species seen at either BM, G or S].

Synonyms: *Seraphyta diffusa* (Sw.) Fisch. & C.A.Mey. ex Pfitz., Engl. & Prantl, Nat. Pflanzenfam. 2 (6): 142. 1889. *Seraphyta diffusa* (Sw.) Schltr., Bull. Herb. Boissier 7: 542. 1899. *Seraphyta diffusa* (Sw.) Pfitz. ex Fawc. & Rendl., Fl. Jamaica 1: 81. 1910. *Seraphyta multiflora* Fisch. & C.A.Mey., Bull. Sci. Acad. Petersb. 7: 24. 1840. Type: Mexico: Hab. in México; in rupibus et arboribus prope Jalapam hanc plantam, ***Schiede s.n.*** Holotype: LE! *Epidendrum funckianum* A.Rich. & Galeotti, Ann. Sci. Nat. ser. 3, 3. 21-22. 1845. Type: tab. 16; Lectotype (here designated): watercolor [mounted with a tracing thereof], *Galeotti t. 34*, W 18874! Possibly Mirador, Veracruz, 1838, *Linden 34*, [only specimen found annotated as *E. funckianum* Nob.; the shape of the inflorescence is not the one illustrated] W 17147 [IDC microfiche 96: 23!] The original numbering of the Galeotti drawings, does not correspond to the numbers that were to be used in their publication; however the tracings do. Jean Linden met with Henri Galeotti at the Hacienda del Mirador, Veracruz in 1838, and together with Nicholas Funck and August Ghiesbreght climbed the Pico de Orizaba (Ceulemans, 2006). The specimens of *Galeott 5234* are mostly annotated as *E. acutiflorum* Nob. *Epidendrum paniculatum* Sessé & Mociño, Fl. Mexic. 204. 1894. Type: Veracruz: Montium Cordovae. Floret Julio. Lectotype (here designated): 1797, *Sessé et al. 4302*, MA [CNHM neg. 40991!] This is the only specimen annotated as *Epidendrum paniculatum*. *Epidendrum tenuiflorum* Hort. ex Lindl., Fol. Orch. Epidendrum: 88. 1853. *nomen in syn.* non *Epidendrum tenuiflorum* Schltr. (= *Epidendrum centropetalum* Rchb.f.) *Epidendrum acutiflorum* A.Rich. & Galeotti, *nomen*, Comptes Rend. Acad. Sci. Par. 18: 512. 1844. The following name has been cited as a synonym: *Epidendrum diffusum* Sw. var. ß *depauperatum* Cogn., Mart. Fl. Bras. 3, pt. 5: 155. 1898. Type: Surinam: Sylvis maximis prope Mariepaston [French Guyana: Mariepasoula], ***Kegel 1450 (5146).*** Lectotype (here designated): W 17679! We do not believe it is the same as *E. diffusum* and the locality is far from the confirmed natural range of distribution, It may correspond to *Epidendrum vincentinum* Lindl.; however, without dissecting the only flower in an envelope we cannot be sure; the stem is a simple one, not branched.

Hierba epífita, simpodial, cespitosa, de 18-75 cm de alto. **Raíces** basales, gruesas, de 1.5-2.5 mm de grosor. **Tallos** sencillos, tipo caña, con un rizoma corto en la base a partir del cual se originan los tallos nuevos cerca de 1 cm de distancia entre un tallo y otro, teretes en la base, lateralmente comprimidos hacia el ápice, 6-32 x 0.2-0.8 cm. **Hojas** 3-11, distribuidas hacia a lo largo del tallo, dísticas; vainas foliares lateralmente comprimidas, imbricadas; lámina elíptica a lanceolada, obtusa a bilobada, coriácea, verde, el margen y el envés frecuentemente rojizo, 1.2-9.0 x 0.7-3.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, muy ramificada, erecta, 12-60 cm de largo; pedúnculo corto, recto, 0.5-6.5 cm de largo; sin brácteas que lo cubran; raquis terete, rojizo, la ramificaciones con brácteas abrazadoras, triangulares, agudas. **Brácteas florales** mucho más cortas que el ovario, triangulares, agudas, escariosas, 0.2-0.6 mm de largo. **Flores** 60-300, simultáneas, resupinadas, pequeñas, membranáceas, verde amarillentas a verde rojizas, translúcidas, columna verdosa, secan café rojizo; fragancia ausente. **Ovario** terete, delgado, liso, 2.6-3.3 mm de largo. **Sépalos** extendidos, libres, lanceolados, agudos, 3-nervados, dorsalmente carinados, margen entero, extendido; el dorsal 5.5-7.5 x 0.7-1.3 mm; los laterales ligeramente oblicuos, 5.1-7.5 x 0.8-1.4 mm. **Pétalos** extendidos, libres, lineares, acuminados, 1-nervados, margen entero, extendido, 5.2-6.7 x 0.1-0.3 mm. **Labelo** unido a la columna, base cordada, entero, ovado cordiforme, agudo, margen entero, 4.5-6.2 x 3-4 mm; bicalloso, los callos alargados, pequeños, divergentes; disco tricarinado, las carinas poco evidentes, las laterales hasta la mitad del labelo, la central se prolonga hasta el ápice del labelo. **Columna** recta, 1.8-2.0 x 0.8-1.0 mm. **Clinandrio** reducido, entero. **Antera** reniforme, 4-locular. **Polinios** 4, subiguales, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, de longitud similar a la de los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando más de la mitad de la cavidad estigmática. **Nectario** corto, penetrando 1/5 del ovario, no ornamentado. **Cápsula** ovoide, pedicelo 3-6 mm de largo, cuerpo 1.0-1.4 x 0.7-0.8 cm, cuello 1.5-2.0 mm de largo.

Epiphytic, sympodial, caespitose **herb. Roots** basal, thick. **Stems** simple, cane-like, with a short rhizome at the base, terete at the base, laterally compressed above. **Leaves** 3-11, distributed throughout the stem, distichous; sheaths laterally compressed, imbricating; blade elliptic to lanceolate, obtuse to bilobed, coriaceous, green, the margin and underside frequently reddish. **Inflorescence** apical, paniculate, much branched, erect; peduncle short, straight, without bracts, rachis terete, reddish, the branches with triangular, acute bracts. **Floral bracts** much shorter than the ovary, triangular, acute, scarious. **Flowers** 60-300, simultaneous, resupinate, small, membranaceous, yellowish green to reddish green, translucid, column greenish, reddish when dry; without fragrance. **Ovary** terete, thin, smooth. **Sepals** spreading, free, lanceolate, acute, 3-veined, dorsally carinate, margin entire, spreading, the lateral sepals oblique. **Petals** spreading, free, linear, acuminate, 1-veined, margin entire, spreading. **Lip** united to the column, entire, ovate-cordiform, acute, base cordate, margin entire, spreading; bicallose, the calli elongate, small, divergent; disc tricarinate, the keels not evident, the lateral keels reaching the middle of the lip, the central keel running to the apex. **Column** straight. **Clinandrium-hood** reduced, entire. **Anther** reniform, 4-celled. **Pollinia** 4, subequal, obovoid, laterally compressed; caudicles soft and granulose, about as long as the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** short, penetrating 1/5[th] of the ovary, smooth. **Capsule** ovoid, pedicel short and thin, apical neck short.



OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Along the slope of the Gulf of Mexico (San Luis Potosí, Querétaro, Hidalgo, Veracruz, Oaxaca), Chiapas and Quintana Roo, Belize, Guatemala, northern Honduras, Cuba, and Jamaica. Growing mainly in oak, pine-oak, deciduous tropical and wet montane forest, from sea level to 1600 m, rarely at 2200 m altitude. Flowering mainly from July to October.

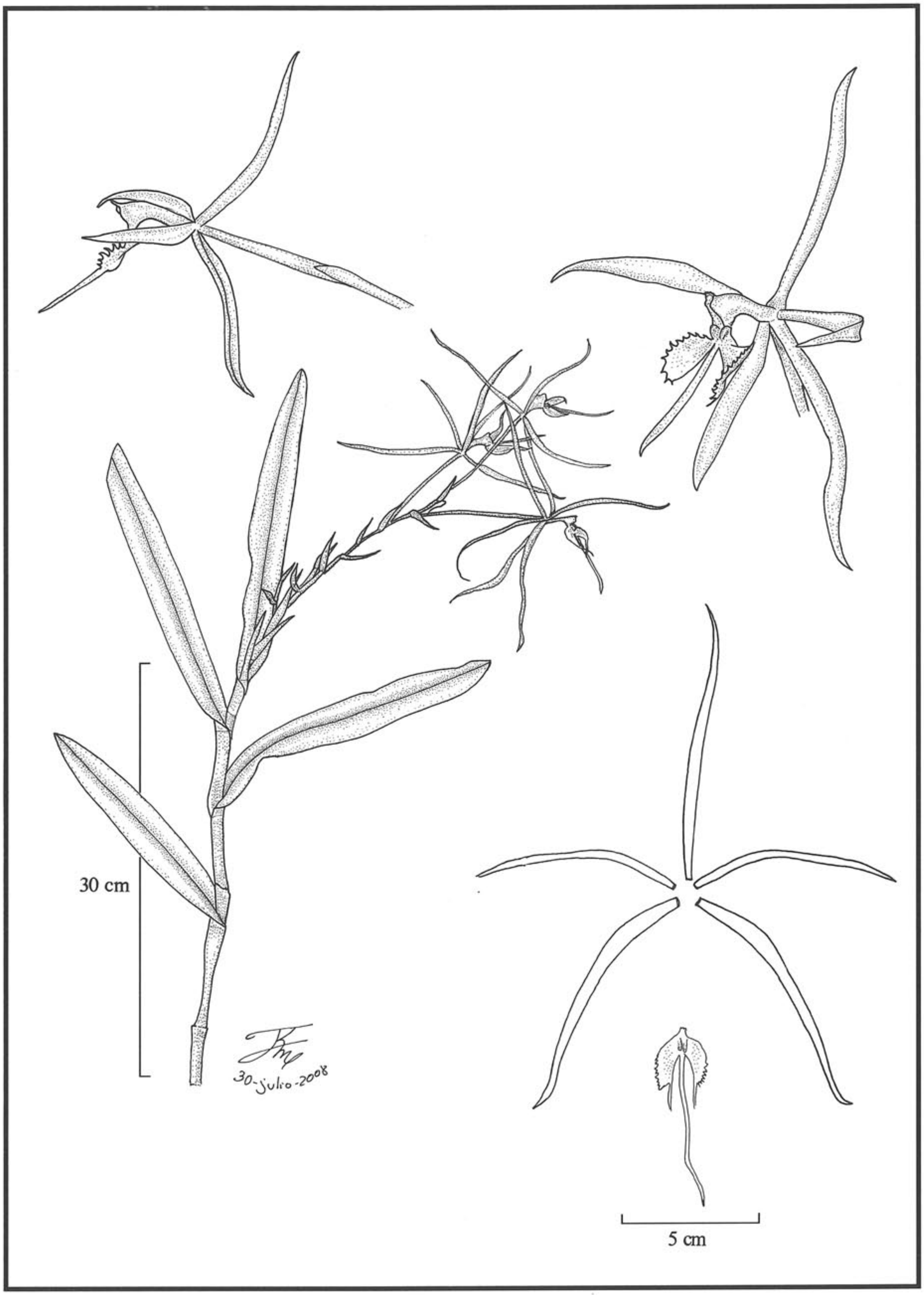
RECOGNITION: *Epidendrum diffusum* belongs to the Seraphyta group and is recognized by simple stems, numerous elliptic to lanceolate elliptic leaves, and a much branched, paniculate inflorescence, up to twice the length of the stems, with many, very small, delicate, translucent flowers with an entire, ovate-cordiform lip; when dry the whole specimen turns conspicuously reddish.

CONSERVATION STATUS: Probable not threatened, although much of its habitat has been replaced by pasture lands.

ETYMOLOGY: From the Latin *diffusus*, disperse, in reference to the large, branching panicle of many disperse, small, inconspicuous flowers.

REFERENCES: Cuelemans, Nicole, 2006, **Jean Linden, Explorer, Master of Orchids**, Cambridge, UK, pp. 237. García-Cruz, J. & L. Sánchez Saldaña, 2000, Orchidaceae II: *Epidendrum*, in **Flora de Veracruz** 112: 31-34. García Cruz, J., 2002, in E. Hágsater & M. Soto (Eds.) **Icon. Orch. (Mexico City)**: 5-6: pl. 572.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM X DOROTHEAE P.H.Allen

Plate 1119

EPIDENDRUM X DOROTHEAE P.H.Allen, Amer. Orch. Soc. Bull. 27(5): 311. 1958.

Type: **HONDURAS:** Francisco Morazán: Hills east of the Yeguare Valley, 3200 ft., in pine-oak woods, epiphytic on *Quercus*, 28 October 1957, ***P. H. Allen 6786.*** Holotype: herbarium not cited, no specimen located. Neotype (here designated): Honduras, col. 1959 by *Paul H. Allen*, mounted 17 October 1975, ***Fritz Hamer A5****, SEL 44075! (xerox, AMO!, illustration voucher: plant, floral segments). Isoneotype: MO 3054499! (digital image, AMO!). As *Epidendrum x doroteae*.

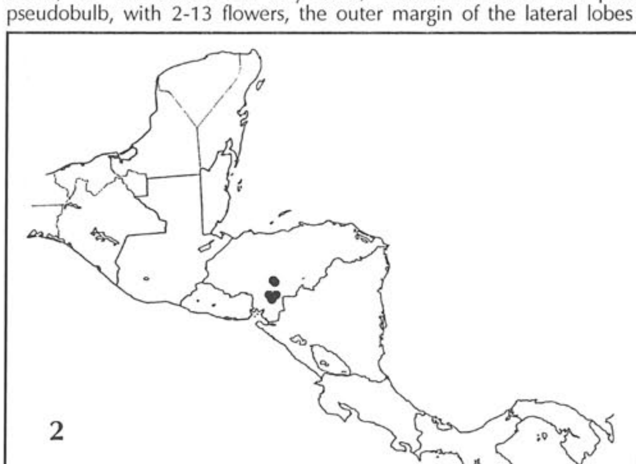
Hierba epífita, simpodial, subcespitosa, 35-38 cm de alto. **Raíces** basales, carnosas, gruesas. **Tallos** engrosados formando un seudobulbo fusiforme, heteroblástico, recto, 12.5-30.5 x 0.8-1.3 cm; cubiertos por 3-4 vainas papiráceas. **Hojas** 3-4 en el tallo inmaduro, 1 a raramente 2 en el psudobulbo maduro, agregadas en el ápice del seudobulbo, coriáceas, articuladas; lámina angostamente elíptica lanceolada, ápice agudo, 12.5-18 x 2-3.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida del tallo inmaduro, pluriracemosa, dística, plurianual, 18 cm de largo; pedúnculo lateralmente comprimido; cubierto por 2-3 brácteas, oblongo triangular, acuminadas; raquis terete, delgado, recto a ligeramente sinuoso. **Brácteas florales** mucho más cortas que el ovario, progresivamente más pequeñas hacia el ápice de la inflorescencia, oblongo triangulares, acuminadas, 1.5-2 cm de largo. **Flores** 3-4, simultáneas, resupinadas, los sépalos y pétalos verde claro a verde amarillentos, conforme envejecen tienden a ser más amarillos, labelo y columna blanco, callo blanco a amarillo pálido; fragancia fuerte, desarrollándose después de oscurecer y persiste hasta la mañana siguiente. **Ovario** terete, no inflado, no ornamentado, 75-90 x 0.3-0.5 mm. **Sépalos** extendidos, libres, angostamente elípticos, acuminados, margen entero, revoluto, 70-90 x 4-5 mm; los **laterales** ligeramente oblicuos. **Pétalos** extendidos, libres, linear elípticos, acuminados, margen entero, extendido, 70-80 x 1.5-2 mm. **Labelo** unido a la columna, trilobado, base truncada a ligeramente cordada, 50-60 x 13-15 mm; bicalloso, los callos laminares, prominentes; lóbulos laterales ovados, oblicuos, agudos, margen externo irregularmente serrulado a ligeramente fimbriado, 20-25 x 9-10(19) mm; lóbulo medio subulado, acuminado, margen entero, 48-50 x 2-3 mm. **Columna** recta a ligeramente arqueada, delgada, 20-23 mm de largo. **Clinandrio** prominente. **Antera** no vista. **Polinios** no vistos. **Rostelo** no visto. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** no vista.

Epiphytic, sympodial, subcaespitose **herb. Roots** basal, fleshy, thick. **Stems** thickened into a fusiform, heteroblastic pseudobulb, straight, covered by 3-4 papery sheaths. **Leaves** 3-4 on the immature pseudobulb, 1, or rarely 2 on the mature stem, aggregate at the apex of the stem, coriaceous, articulate; blade narrowly elliptic-lanceolate, apex acute. **Inflorescence** apical, produced from the immature stem, pluriracemose, distichous, sometimes producing a new inflorescence with time; peduncle laterally compressed, covered by 2-3, oblong-triangular, acuminate bracts; rachis terete, thin straight to slightly sinuous. **Floral bracts** much shorter than the ovary, progressively shorter, oblong-triangular, acuminate. **Flowers** 3-4, simultaneous, resupinate, sepals and petals light green to yellowish green, becoming yellow as they age, lip and column white, callus white to pale yellow; fragrance rich, developing after dark and persistent into the following morning. **Ovary** terete, not inflated, smooth, about as long as the sepals. **Sepals** spreading, free, narrowly elliptic, acuminate, margin entire, revolute, the lateral sepals slightly oblique. **Petals** spreading, free, linear-elliptic, acuminate, margin entire, spreading. **Lip** united to the column, 3-lobed, base truncate to slightly cordate; bicallose, the calli laminar, prominent; lateral lobes ovate, oblique, acute, outer margin irregular serrate to slightly fimbriate; midlobe subulate, acuminate, margin entire. **Column** straight to slightly arching, thin, long. **Clinandrium-hood** prominent.

OTHER SPECIMENS: HONDURAS: Francisco Morazán: Cerro Uyuca, P. N. La Tigra, drainage of the Rio Yeguare, Las Mesas, 3600 ft, 6 XI 1948, *Glassman 1551*, F! ILL! LL! NY! San Antonio de Oriente Quebrada El Naranjo, ca. 4 Km al SE del Zamorano, 3 VII 1996, *Linares 3451*, MEXU x2! Along junction of Jicarito and Gallo creeks, 1000 m, 19 VI 1947, *Molina 142*, F! MEXU! Ibid. *Molina 144*, MEXU! US! Las Mesas, 900 m, 14 VII 1947, *Molina 291*, F! Ibid. 900 m, 7 VII 1964, *Molina 14434*, F! NY! Cerro Uyuca, P. N. La Tigra, Quebrada El Gallo, northeastern slopes of cerro de Uyuca, 900 m, 14 III 1951, *Morton 7030*, US! **El Paraíso**: Hills near Las Mesas, 20 VII 1946, *Williams 10077*, UC! DH! F! LL! MEXU! MICH!

DISTRIBUTION AND ECOLOGY: Natural hybrid known only from central Honduras, east of Tegucigalpa; epiphytic at 900-1000 m altitude. Flowering from June to November. In fruit in March.

RECOGNITION: *Epidendrum x dorotheae* belongs to the Coilostylis Group which is characterized by the sympodial, caespitose plants, the stems forming a fusiform, heteroblastic pseudobulb, with an apical, racemose, distichous inflorescence, the peduncle covered by large bracts (but not spathaceous bracts), and flowers large, star-shaped, with long, narrow sepals and petals. The species is recognized by the 12.5-30.5 cm long, fusiform, pseudobulbs, flowering when immature, the ovary as long as the sepals (70-90 mm), deeply 3-lobed lip, outer margin of the ovate lateral lobes serrulate to slightly fimbriate; a putative hybrid between *Epidendrum nocturnum* Jacq. and *Epidendrum ciliare* L., two widely distributed species. *Epidendrum nocturnum* has cane-like, terete stems, 4-12 leaves distributed throughout the apical 2/3 of the stem, successive flowers produced one at a time, and slightly smaller, with the margins of the lip entire, the inflorescence is very short, without bracts on the peduncle. *Epidendrum ciliare* flowers from the mature fusiform pseudobulb, with 2-13 flowers, the outer margin of the lateral lobes of the lip deeply fimbriate. *Epidendrum oerstedii* Rchb.f. also flowers from the immature growth, but the margins of the lip are entire, and the midlobe of the lip is widened in the middle.



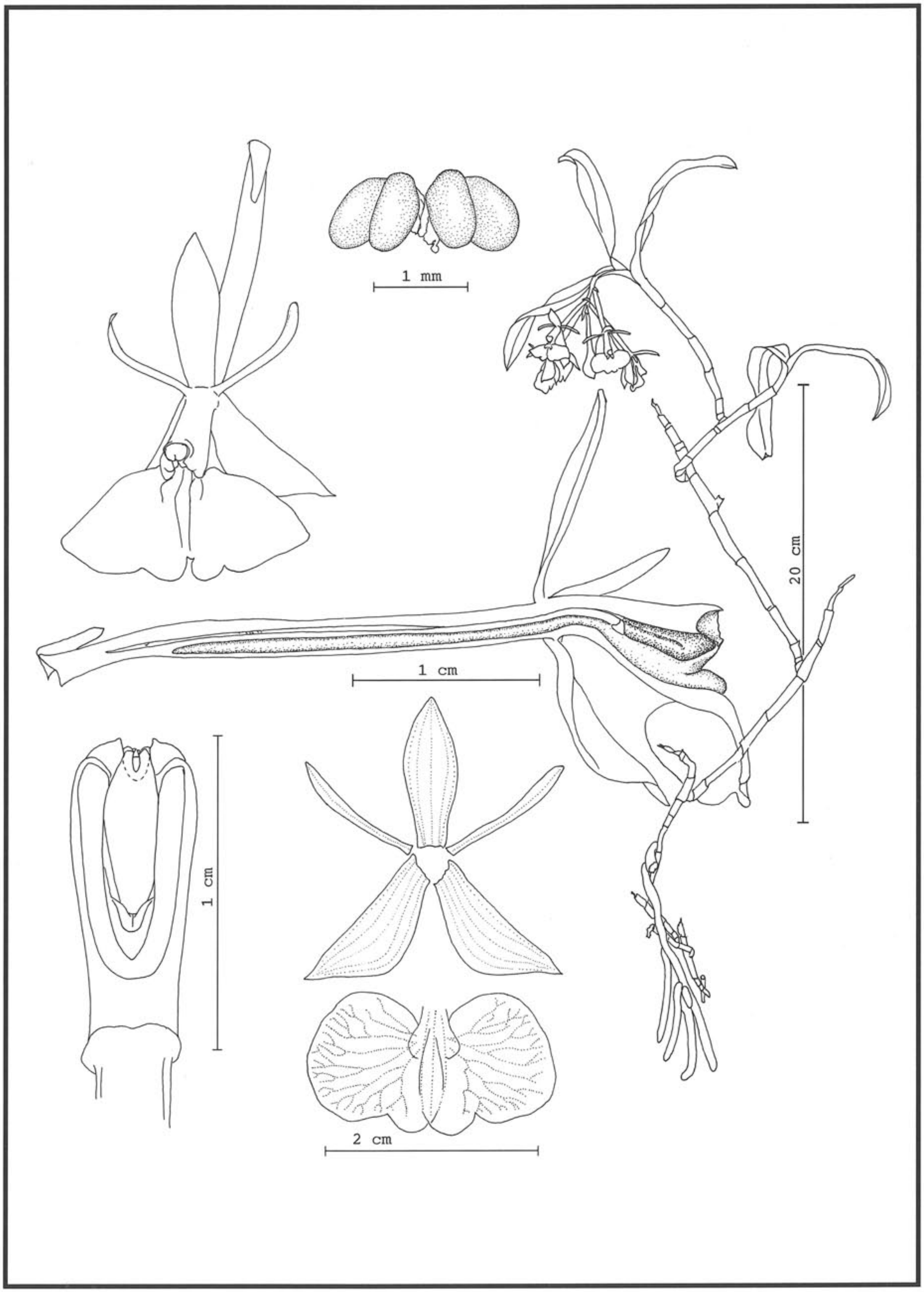
***NOTE:** Hamer visited Dorothy, the widow of Paul Allen, at the Zamorano in Honduras around 1972. She was in possession of Allen's herbarium.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Dorothy O. Allen, wife of the author, who shared in the discovery, and prepared numerous orchid drawings.

REFERENCES: Williams L. O., 1956, An enumeration of the Orchidaceae of Central America and Panama. **Ceiba 5(2): 127**. Nelson, C. H., 2001. Plantas Descritas originalmente de Honduras y sus nomenclaturas equivalentes actuales. **Ceiba 42(1): 44**. Horich, C. Kl., 1977. Estrellas entre las Epidendrums de la America Central. **Orquideologia 12(2-3): 188-190**.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM DRESSLERI Hágsater **Plate 1120**

EPIDENDRUM DRESSLERI Hágsater, Orquídea (Mexico City) 10(2): 340. 1987.

Type: MEXICO: Veracruz: Volcán [Cerro] Santa Marta, 1440-1700 m, col. 17 July 1980, ***R. L. Dressler sub E. Hágsater 6189.*** Prepared from cultivated material, 2 July 1983. Holotype: AMO! Clonotypes: 16 July 1984, XAL! 9 August 1986, AMO! (Illustration voucher).

Hierba epífita, simpodial, erecta, donde cada tallo nuevo se origina de un entrenudo intermedio del tallo anterior; ca. 20-40 cm de alto. **Raíces** producidas en la base de los tallos, carnosas, gruesas, blancas, 2.5-4 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, rectos, originándose en un ángulo recto de manera que la planta forma un zigzag, 3.5-15 x 0.13-0.28 cm; cubiertos abajo por vainas tubulares, escariosas, desprovistas de lámina foliar; 0.8-1.8 cm de largo. **Hojas** 2-3, agrupadas hacia el ápice del tallo, alternas, articuladas; vainas tubulares, ligeramente infladas en el ápice, lisas, 0.4-1.3 cm de largo; lámina angostamente elíptica, aguda, subcoriacea, lisa, verde, margen entero, 3-7 x 0.8-1.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueada, 3-5 cm de largo; pedúnculo lateralmente aplanado, ancipitoso, delgado, recto, 18-20 mm de largo; provisto en la parte media de una bráctea semejante a las florales, angostamente triangular, acuminada, abrazadora, 7 mm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, agudas, abrazadoras, las apicales gradualmente más cortas, 3-7 mm de largo. **Flores** 3-12, simultáneas, no resupinadas, de color verde oscuro con el ápice de la columna, callos y quillas ligeramente amarillentos, fragancia nocturna intensa a jazmín. **Ovario** terete, delgado, no inflado, liso, 25-35 mm de largo. **Sépalos** extendidos, libres, angostamente elípticos, agudos, con una quilla dorsal incipiente, 5-nervados, glabros, membranáceos, margen extendido, entero; 13-16 x 4-5.5 mm; los **laterales** oblicuos, ligeramente falcados. **Pétalos** extendidos, libres, linear oblanceolados, obtusos, 1-nervados, membranáceos, margen extendido, entero; 12-13 x 1-1.3 mm. **Labelo** unido a la columna, subreniforme, carnoso, convexo, cordado en la base, con el ápice cortamente trilobado, los lóbulos laterales suborbiculares, el lóbulo medio emarginado, formado por 2 lóbulos pequeños, redondeados, margen entero, 12 x 23 mm; bicalloso, los callos sublaminares, delgados, cortos; disco con 3 quillas cortas, delgadas, bajas, romas, la central ligeramente más larga. **Columna** recta, delgada en la base, gradualmente más ancha en el ápice, 8-10 mm de largo. **Clinandrio** corto, margen entero. **Antera** ovoide, 4 locular. **Polinios** 4, ovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas más cortas que los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** muy pequeños, ca. de 1 mm de largo. **Nectario** muy profundo, penetrando ¾ partes del ovario, no inflado, liso. **Cápsula** no vista.

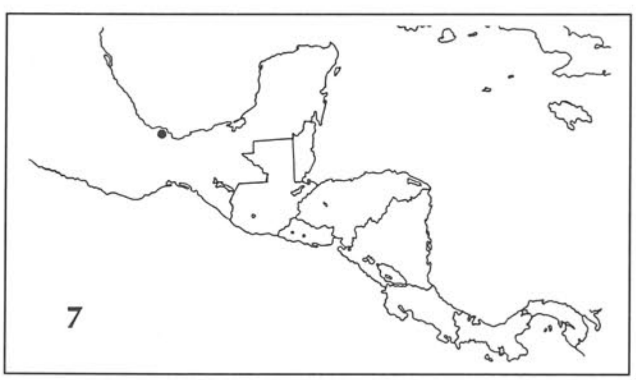
Epiphytic, sympodial, erect **herb** where the new growth originates from an intermediate internode of the previous stem. **Roots** from the base of the stems, fleshy, thick. **Stems** simple, cane-like, terete, thin, straight, produced at a right angle, so as to form a zigzag habit; covered below by tubular, scarious sheaths. **Leaves** 2-3, aggregate towards the apex of the stems, alternate, articulate; sheaths tubular, slightly inflated towards the apex, smooth; blade narrowly elliptic, acute, subcoriaceous, smooth, green, margin entire. **Inflorescence** apical, flowering only once, racemose, arching; peduncle laterally compressed, ancipitose, thin, straight; provided in the middle with a bract similar to the floral bracts. **Floral bracts** much shorter than the ovary, narrowly triangular, acute, the apical ones gradually shorter. **Flowers** 3-12, simultaneous, non-resupinate, dark green, with the apex of the column, calli and keels yellowish; nocturnal fragrance intense, of jasmine. **Ovary** terete, thin, not inflated, smooth. **Sepals** spreading, free, narrowly elliptic, acute, with an incipient dorsal keel, 5-veined, glabrous, membranaceous, margin spreading, entire; the **lateral sepals** oblique, slightly falcate. **Petals** spreading, free, linear-oblanceolate, obtuse, 1-veined, membranaceous, margin spreading, entire. **Lip** united to the column, subreniform, fleshy, convex, base cordate, apex short 3-lobed, the lateral lobes suborbicular, the midlobe emarginate, forming 2 small, rounded lobes, margin entire; bicallose, the calli sublaminar, thin, short; disc with 3 short, thin, low, rounded keels, the central keel somewhat longer. **Column** straight, thin at the base, gradually dilated. **Clinandrium hood** short, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, ovoid, laterally compressed, subequal, caudicles soft and granulose, shorter than the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** very deep, penetrating ¾ of the ovary, not inflated, smooth.

OTHER SPECIMENS: None seen.

OTHER RECORDS: MEXICO: Chiapas: Without data locality, 1998, *William Goldner s.n.?*, digital photo, AMO!

DISTRIBUTION AND ECOLOGY: Endemic to southern Mexico, south of the Gulf of Mexico: southern Veracruz and Chiapas where it is reported to grow with *E. cerinum* Schltr. Epiphytic at 1440-1700 m altitude. Flowering June to August.

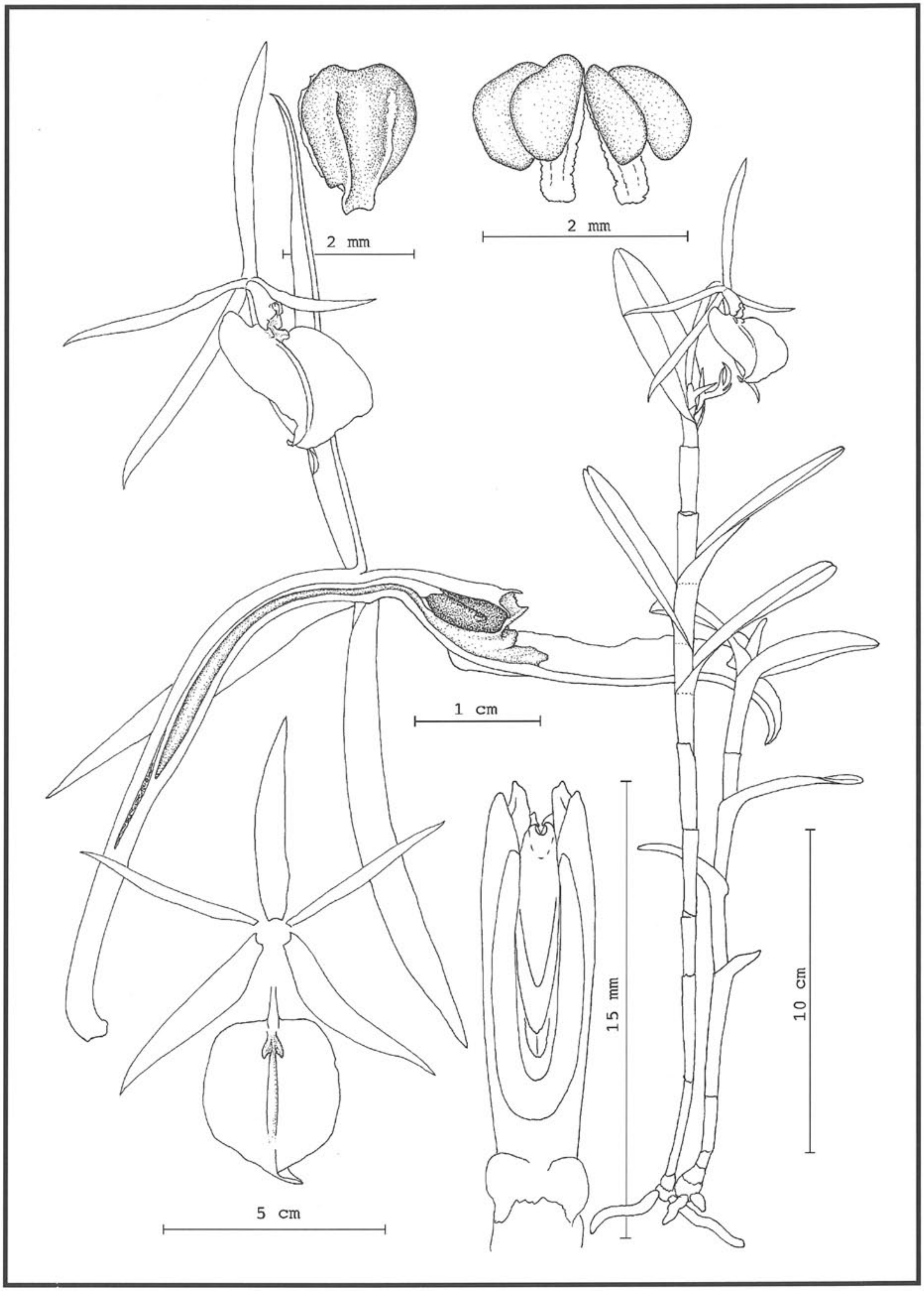
RECOGNITION: *Epidendrum dressleri* belongs to the Arbuscula Group, Incomptum Subgroup which is characterized by the successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, a short apical inflorescence with fleshy greenish to violet-green flowers with short ovaries, the lip entire to 3-lobed. The species is recognized by the short, thin stems with 2-3 leaves, few-flowered inflorescence with 3-12, simultaneous, non-resupinate, dark green flowers, and the wide, reniform lip, (23 mm wide), the apex forming 4 rounded lobes, and the long ovary (25-30 mm long). It is similar to *Epidendrum incomptoides* Ames, Hubbard & C. Schweinfurth which has an inflorescence with 6-8 yellowish brown flowers, the lip reniform with the apex 3-lobed (12.5 mm wide), the midlobe entire and apiculate with the short ovary (13 mm long) slightly inflated. *Epidendrum brenesii* Schltr. has an inflorescence with 8-12[40] violet-green or yellowish green flowers, a reniform, velutinous lip (12-19 mm wide), with the apex somewhat 4-lobed, the ovary is short (10-18 mm long). *Epidendrum cerinum* Schltr. has larger, olive green or lavender to black-colored flowers, the widely ovate lip with a fimbriate margin, the lip obliquely united to the column and the ovary short (13-15 mm long).



CONSERVATION STATUS: DD. Data deficient. The species is apparently rare with colonies of few individuals.

ETIMOLOGY: In honor of Robert L. Dressler, who collected the pretype material and is the most important orchid taxonomist of the second half 20 century having lead a great number of younger botanists. Together with Glenn E. Pollard he studied the genus *Epidendrum* (*sensu lato*) in Mexico.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM EBURNEUM Rchb.f.

Plate 1121

EPIDENDRUM EBURNEUM Rchb.f., Gard. Chron. (1867): 404. 1867.

Type: From Central America, or from West Indies, and was grown by ***T. Tuffnell [35]***, Esq., of Spring Grove, Isleworth. Holotype: W 42402! Copy of tracing from type at Reichenbach herbarium by R. Schlechter, AMES!

Epidendrum leucocardium Schltr., Repert. Spec. Nov. Regni Veg. Beih. 12: 206. 1913. Type: PANAMA: Colon: Rio Indio de Fató, near sea level, 24 August 1911, ***Henri Pittier 4266***. Holotype: US 679377! Photograph of the type at US, AMES!

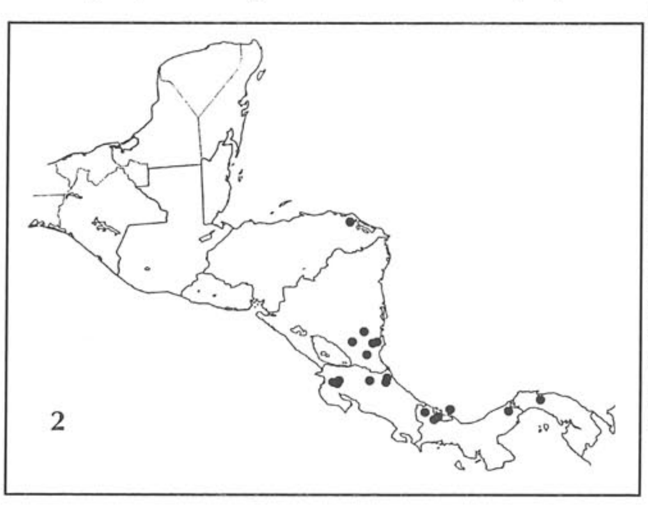
Hierba epífita, simpodial, cespitosa, 20.0-80.0 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, 1.0-1.5 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, 13.0-70.0 x 0.2-0.55 cm. **Hojas** 4-9, distribuidas en la mitad apical del tallo, coriáceas; vaina foliar tubular, lateralmente comprimida, 2.0-4.0 cm de largo; lámina ovada elíptica, bilobada, carina dorsal evidente, 3.5-10.0 x 1.5-4.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa a pluriracemosa, produce una flor a la vez y florece durante varios años, raquis en zigzag. **Bráctea floral** mucho más corta que el ovario, triangular, aguda, 4.0-6.0 x 2.0-3.0 mm. **Ovario** terete, no inflado, no ornamentado, 30-70 x 1.2-1.8 mm. **Flores** una a la vez, si hay dos, producidas de diferentes racimos, sucesivas, resupinadas, sépalos y pétalos verde amarillentos, labelo y columna blanco, los callos amarillos, fragancia no registrada. **Sépalos** extendidos, angostamente elíptico lanceolados, acuminados, con 9-nervaduras principales de las cuales se originas varias más dando la apariencia de tener 12 o más nervaduras, margen entero, revoluto, 30.0-46.0 x 5.0-6-5 mm. **Pétalos** extendidos, linear lanceolados, acuminados, 5-nervados con algunas nervaduras secundarias dando la apariencia de ser 7-9 nervados, margen entero, revoluto, 26-44 x 2.0-2.4 mm. **Labelo** unido a la columna, base cordada, entero, suborbicular, apiculado, el ápice reflexo, raramente con un seno no profundo a cada lado del apículo, dando la apariencia de tener el ápice trilobado, margen diminutamente ondulado, extendido, 24-35 x 27-30 mm; bicalloso, los callos laminares, prominentes aunque cortos, divergentes, agudos; disco con una quilla prominente, la cual se prolonga hasta el ápice. **Columna** recta a arqueada, dilatada hacia el ápice, 9.0-12.0 x 2.3-4.5 mm. **Clinandrio** prominente, el margen dentado fimbriado. **Antera** ovoidea, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** reducidos. **Nectario** penetrando 1/2 del largo del ovario, delgado, liso. **Cápsula** elipsoide, pequeña; pedicelo de 5.0-10.0 x 1.0-2.0 mm, cuerpo 20-50 x 9-15 mm, ocupa alrededor de 1/2 a 3/4 de la longitud total y se localiza ligeramente arriba de la mitad, cuello apical 10-15 x 1.5-2.5 mm.

Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, laterally compressed. **Leaves** 4-9, distributed along the apical half of the stems, coriaceous; sheath tubular, laterally compressed; blade ovate-elliptic, with an evident dorsal keel. **Inflorescence** apical, racemose to pluriracemose, producing one flower at a time during several years, rachis zigzag. **Floral bract** much shorter than the ovary, triangular, acute. **Ovary** terete, not inflated, smooth, about as long as the sepals. **Flowers** one at a time from each raceme, successive, resupinate, sepals and petals yellowish green, lip and column white, the calli yellow. **Sepals** spreading, narrowly elliptic-lanceolate, acuminate, 9-veined, several branching so as to appear 12-veined or more, margin entire, revolute. **Petals** spreading, linear-lanceolate, acuminate, 5-veined, with secondary veins so as to appear 7-9-veined, margin entire, revolute. **Lip** united to the column, base cordate, entire, suborbicular, apiculate, the apex reflexed, rarely with a deep sinus on each side of the apicule, then the apex appearing 3-lobed, margin minutely undulate, spreading; bicallose, the calli laminar, prominent but short, divergent, acute; disc with a prominent keel running down to the apex. **Column** straight to arching, dilated towards the apex. **Clinandrium-hood** prominent, the margin dentate-fimbriate. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granular, longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** penetrating ½ of the ovary, thin, smooth. **Capsule** ellipsoid, short, pedicel short, the body occupies about ½ to ¾ the total length, and is located slightly above the middle; apical neck short.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging along the Caribbean lowlands in Honduras, Nicaragua, Costa Rica and Panama. Epiphyte in wet forests at 0-600 m altitude. Flowering throughout the year, mainly from August to March. Fruiting generally from October to December.

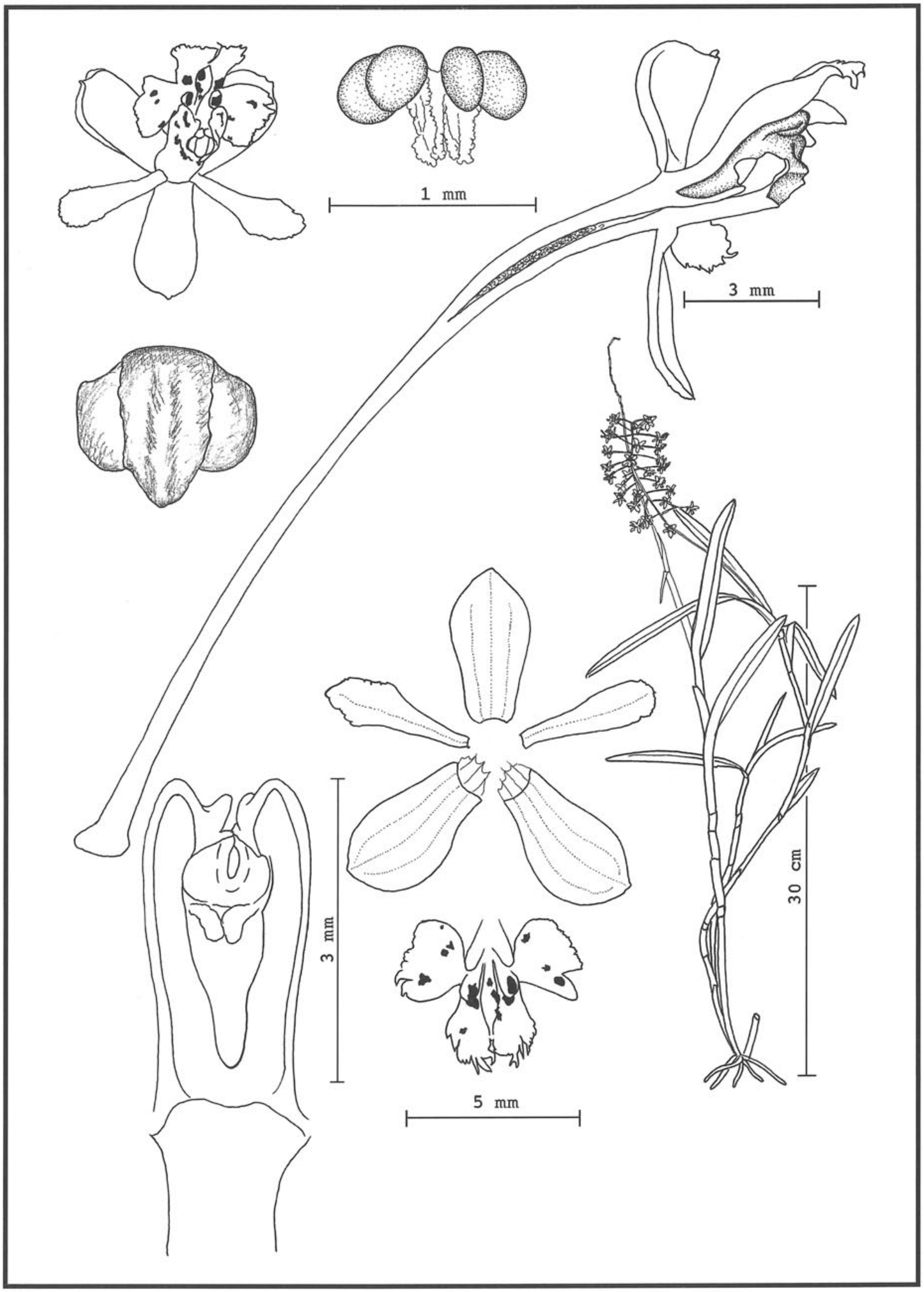
RECOGNITION: *Epidendrum eburneum* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, short, racemose or pluri-racemose inflorescence, without spathaceous bracts, usually large, star-shaped flowers, with similar sepals and petals, and the Nocturnum Subgroup which has cane-like stems, non-thickened towards the middle, and usually successive flowers; the flowers are mostly indistinguishable in shape. The species can be recognized by the laterally compressed stems, entire, suborbicular lip, rarely with a sinus on each side of the apicule, and then the apex 3-lobed, ovary 30-70 mm long; the body of the capsule occupying much of the ovary and slightly above the middle. It is similar to *Epidendrum nocturnum* Jacq., a wide-spread species, with terete stems, deeply 3-lobed lip, and the body of the capsule is 45-62 mm long, with the body of the capsule in the middle and occupying nearly the whole length. *Epidendrum angustilobum* Fawc. & Rendle (syn: *Epidendrum latifolium* (Lindl.) Garay & Sweet) which is widely distributed in the Antilles, Colombia, Venezuela and the Guyanas, and rare in Costa Rica and Panama has widely ancipitose stems, a deeply 3-lobed lip, and long ovary (120-200 mm), wide leaves (2-7 cm), and the body of the capsule short, above the middle of the ovary. *Epidendrum mesocarpum* Hágsater is found at higher altitudes (900-2000 m) in Mexico (from the border of the states of Oaxaca and Chiapas), Guatemala, El Salvador, Honduras and Nicaragua, and has short, ancipitose stems, a deeply 3-lobed lip, and the ovary 120-160 mm long, with the body of the capsule elongate, slightly above the middle of the ovary. *Epidendrum noctеburneum* Hágsater & L.Sánchez the natural hybrid between *E. nocturnum* and *E. eburneum* is known from Nicaragua, Costa Rica and Panama, and has a clearly 3-lobed lip, and the body of the capsule occupies ¾ of the ovary.



2

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin, *eburneus*, ivory-white, in reference to the color of the lip.



EPIDENDRUM ELEGANTISSIMUM F.Lehm. & Kraenzl. **Plate 1122**

EPIDENDRUM ELEGANTISSIMUM F.Lehm. & Kraenzl., in Engl. Bot. Jahrb. Syst. 26: 472. 1899.

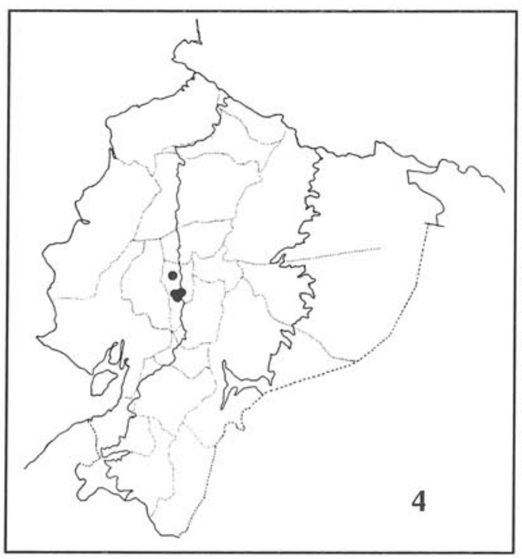
Type: ECUADOR: Pichincha: Circa Silante in declivitantibus montis Corazon et circa Tamboloma, Cordillera occidentalis ditionis Guaranda, 2200-2600 m, ***F. C. Lehmann 6859***. Holotype: K!

Synonym: *Epidendrum pedicellare* Schltr., Repert. Spec. Nov. Regni Veg. 14: 390. 1916. Type: ECUADOR: Chimborazo, route Quito to Guayaquil, September 1881, ***A. Sodiro 51***. Holotype: B, destroyed. Isotype: BR!

Hierba terrestre, cespitosa, 31-52 cm de alto. **Raíces** de la base de los tallos, 1.5-2.0 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, 18-27 x 0.3-0.6 cm. **Hojas** 3-7, distribuidas en el tercio apical del tallo, vaina tubular estriada, 2.5-5.7 x 0.3-0.6 cm, lámina angostamente oblongo lanceolada, desigualmente bilobada, margen apical eroso, 5-12[15] x [0.7]0.9-1.3 cm. B**rácteas espatáceas** 1-2[3], largas, tubulares, ancipitosas, de lados paralelos, agudas, 3-8 x 0.2-0.4 cm, la segunda hacia la mitad del pedúnculo. **Inflorescencia** apical, del tallo maduro, racemosa, erecta, florece una sola vez, 18-30 cm de largo, pedúnculo ancipitoso, ocupa la mitad del largo total. **Brácteas florales** triangulares, acuminadas, mucho más cortas que el ovario, 0.5-2 mm de largo. **Flores** 45-65, simultáneas, no resupinadas, pequeñas pero formando un racimo muy atractivo, color blanco, el labelo y el ápice de la columna con puntos morados, en ocasiones con dorso de los sépalos con puntos púrpura; fragancia diurna fétida. **Ovario** largo y delgado, ligeramente engrosado en el tercio apical, no ornamentado, 13-25 x 0.5 mm. **Sépalos** extendidos, obovados a espatulados, obtusos, margen entero, algo carnosos, 3-nervados, 4-5(6) x 2.0-2.3 mm, los laterales ligeramente oblicuos, verrugosos dorsalmente hacia el ápice. **Pétalos** extendidos, oblanceolados a espatulados, redondeados, margen apical eroso, 1-nervados, 4.4-5 x 1.2 mm. **Labelo** unido a la columna, trilobado, 4.3-5 x 4-5.2 mm; bicalloso, los callos alargados y prominentes, en algunos casos divergentes, disco del labelo con una a tres quillas , la quilla central prominente; lóbulos laterales dolabriformes, margen apical progresivamente laciniado, completamente laciniado dentado; lóbulo medio ligeramente más grande que los laterales, obcuneado, emarginado, margen apical profundamente laciniado. **Columna** recta a ligeramente arqueada, con dos alas, falcadas, 3-3.5 mm de largo. **Clinandrio** reducido, entero. **Rostelo** subapical, hendido. **Antera** reniforme, con una quilla ancha y roma al frente, prolongándose hacia abajo, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, caudículas granulosas, más largas que los polinios, viscidio semilíquido. **Nectario** corto, sin traspasar el perianto, no ornamentado. **Cápsula** no vista, previsiblemente con un pedicelo largo y cuello apical reducido.

Terrestrial or epiphytic, caespitose **herb. Roots** basal. **Stems** cane-like, terete. **Leaves** distributed along the apical third of the stem; sheath tubular, striated; blade narrowly oblong-lanceolate, apex unequally bilobed, apical margin erose. **Spathaceous bracts** 1-2, tubular, ancipitose, narrow, acute, the second one near the middle of the peduncle. **Inflorescence** apical, from mature stem, racemose, erect, flowers only once, peduncle occupies half the entire length. **Floral bracts** very short, triangular, acuminate. **Flowers** 45-65, simultaneous, non-resupinate, small but forming an attractive raceme, white, the lip and apex of column with purple dots, fragrance fetid. **Sepals** obovate to spatulate, obtuse, verrucose dorsally towards the apex, 3-veined. **Petals** oblanceolate to spatulate, rounded, apical margin erose, 1-veined. **Lip** united to the column, 3-lobed, bicallose, the calli prominent, occasionally divaricate; disc with a central prominent keel; lateral lobes dolabriform, apical margin progressively laciniate; midlobe somewhat larger than the laterals, obcuneate, emarginate, the apical margin deeply laciniate. **Column** straight to somewhat arquate. **Clinandrium hood** reduced, entire. **Anther** reniform with a wide, low keel in front terminating in a wide apex, 4-celled.

OTHER SPECIMENS: ECUADOR: Western Cordillera, 2500 m, *Rimbach 283*, US! Westl. S. Miguel, ca. 2000 m, 21 X 1933, *Schimpff 253*, AMES x2! G! QCNE! Z! *Sodiro s.n.*, QPLS x5! **Bolivar:** 8 km W of Santa Fé, 3150 m, 2 XI 1983, *Brandbyge 42457*, AAU! MO! Guaranda-Caluma-Catarama. Km 7.7, 3080 m, 5 VII 1991, Dodson 18766, RPSC! Guaranda 3000 m, 1 III 1994, *Hirtz 1585*, AMO x2! Tamboloma , 2000 m, 1 XI 1880, *Lehmann 120*, W! Guaranda to Facundo Vela, 3100 m, 19 II 1991, *Whitten 91066*, QCNE! **Cotopaxi:** Zumbagua, 18 VII 1959, *Barclay 8072*, AMES! COL! Pilaló, 15 VII 1984, *Dodson 14308*, AAU! RPSC QCA! QCNE. Macuchi, 11 VI 1983, *Hágsater 7591*, AMO! NY! QCNE! Pilaló, 1 VII 1968, *Holm Nielsen 1131*, AAU! AMES! F! **Pichincha:** Guarumal, ca. 2100 m, 31 XII 1955, *Asplund 18973*, AMES! Alóag-Sto. Domingo, 3 VI 1976, *Brenner 59*, SEL! Ibid. km 35, 5 III 1974, *Dodson 5418*, SEL! Ibid. km 42, 11 V 1981, *Dodson 10700*, SEL! Ibid. 1 VII 1982, *Dodson 13164*, SEL! Ibid. km 58, 8 V 1985, *Dodson 15847*, AMES MO QCA! QCNE. Ibid. km 78, 4 VI 1986, *Dodson 16497*, QCNE! RPSC! SEL! Ibid. km 31.7, 9 VI 1983, *Hágsater 7534*, AMO! Ibid. km 23, 9350 ft, pressed cult. 9 VI 1983, *Hágsater 7540*, AMES! AMO! MO! QCA! QCNE! SEL! Ibid. pressed cult. 15 I 1985, AMO! (Illustration voucher) Ibid. pressed cult. 25 I 1985, AMES! K! Atacazo, 15 VII 1983, *Hirtz 1124*, RPSC! SEL! Quito, *Jameson s.n.*, W! Alóag-Cornejo Astorga, 29 V 1979, *Løjtnant 13991*, AAU! GB! Below San Juan, 12 I 1988, *Molau 2436*, GB!

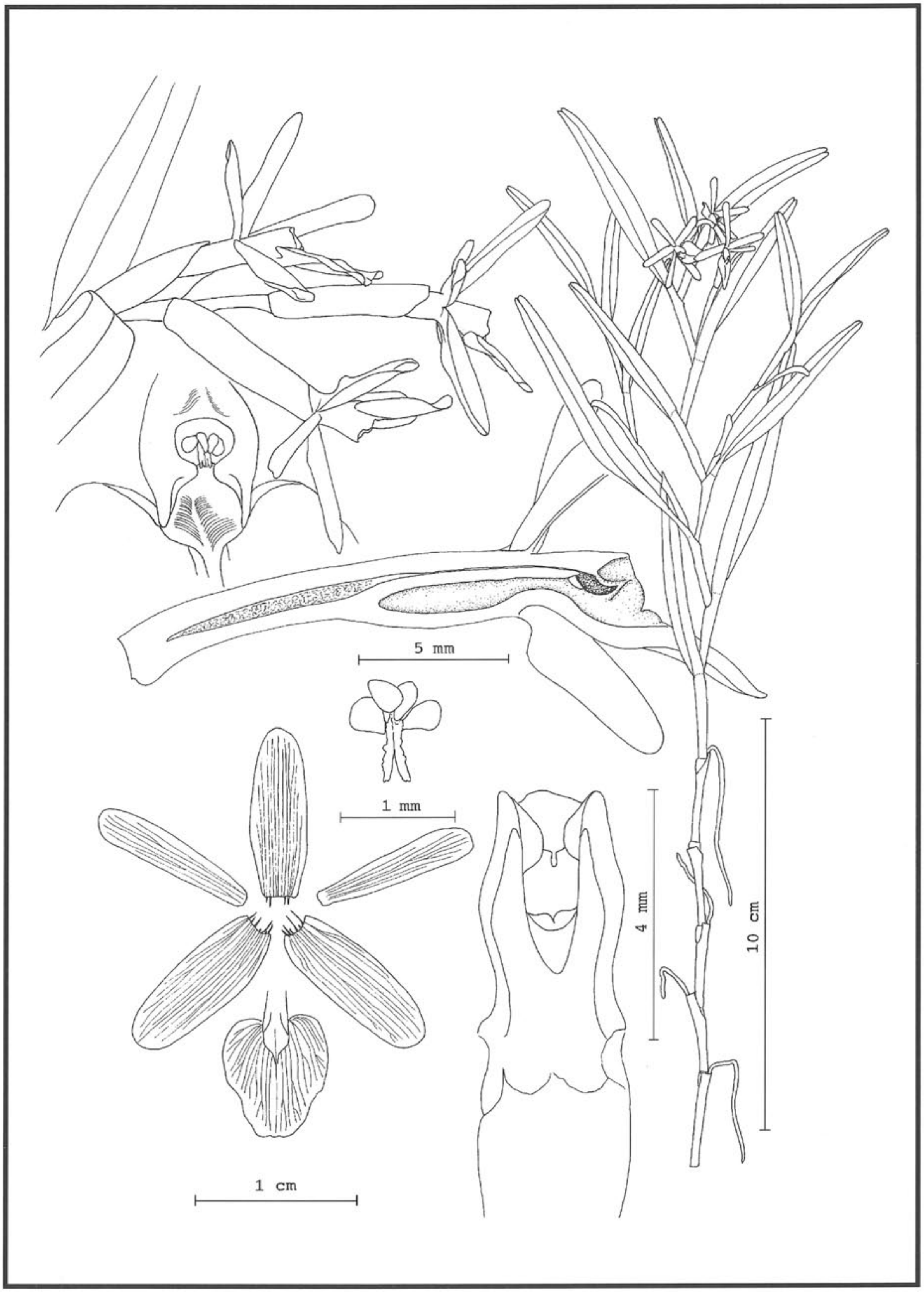


DISTRIBUTION AND ECOLOGY: Found on the western slopes of the Andes in central Ecuador at 2500-3000 m altitude, on rocks in full sunlight or epiphytic. Flowering May-June.

RECOGNITION: *Epidendrum elegantissimum* belongs to the Mancum Group and Subgroup, which is characterized by the sympodial growth, narrow spathaceous bracts with parallel sides, erect raceme with non-resupinate flowers and a generally reduced, fleshy lip. The species has terete stems, somewhat large, white flowers, with purple dots on the lip, oblanceolate to spatulate petals, lateral lobes of the lip progressively laciniate; midlobe emarginate, the apical margin deeply laciniate, column straight to somewhat arcuate.

CONSERVATION STATUS: It is very common and grows on disturbed road-side banks.

ETYMOLOGY: From the Latin *elegans*, elegant, in reference to the handsome inflorescence of numerous white flowers with purple dots.



EPIDENDRUM FLEXICAULE Schltr. **Plate 1123**

EPIDENDRUM FLEXICAULE Schltr., Beih. Bot. Centralbl. 36(2): 403. 1918.

Type: COSTA RICA: La Palma, 1500 m, ***C. Wercklé s.n.***, B (destroyed). Lectotype (designated by Hágsater, 1992): Tracing of the illustration done under the supervision of R. Schlechter, AMES!

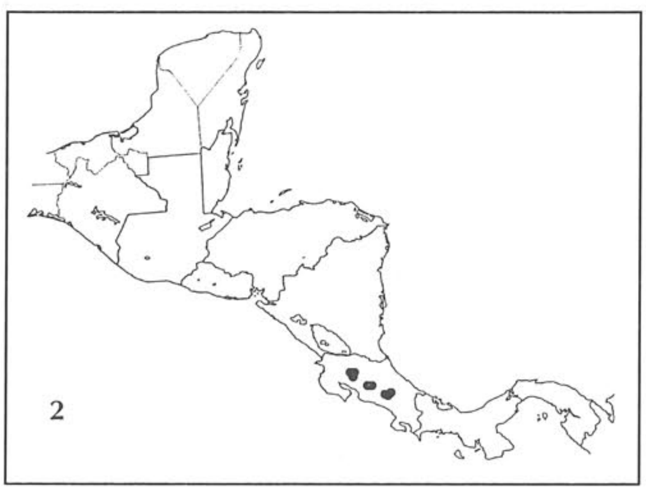
Hierba epífita, monopodial, escandente o rastrera, 15-30 cm o más de alto. **Raíces** producidas de los nodos basales del tallo principal y de las ramas, filiformes, carnosas, 0.3-0.8 mm de grosor. **Tallos** rastreros, ramificados y sucesivos, tipo caña, flexuosos, teretes, el principal 10-25 x 1.5-4 mm, los tallos secundarios más cortos, 4-11 cm de largo. **Hojas** numerosas, distribuidas a todo lo largo de tallos, vaina foliar tubular, estriada, hasta 2.7 cm de largo, láminas linear elípticas, ápice bilobado, las del tallo principal, más o menos iguales, 5.2-8.2 × 0.5-0.8 cm, las de las ramas desiguales, más cortas que las del tallo principal, 2.8-6 × 0.5-0.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida del tallo principal y de las ramas, racemosa, dística, laxa, 2-4 cm de largo; pedúnculo muy reducido. **Brácteas florales** conduplicadas, ligeramente más cortas o largas que el ovario, ovadas, 10-13 × 6-7 mm. **Ovario** inflado en la mitad apical, terete, 11-13 mm de largo. **Flores** 2 ó 3, simultáneas, el labelo siempre orientado hacia el raquis, verdes, se tornan pardo anaranjado; fragancia nocturna, dulce, a jazmín. **Sépalos** extendidos, libres, glabros, subcoriáceos, angostamente elípticos, redondeados, con una quilla dorsal prominente, 7-nervados, los nervios laterales divididos cerca de la base, margen entero, revoluto, 9-12 × 3.5-4 mm. **Pétalos** extendidos, glabros, membranáceos, linear lanceolados, ápice redondeado, 3-nervados, las venas laterales divididas de manera que parecen 5-7 nervados, margen entero, revoluto, 9-11 × 1-2 mm. **Labelo** unido a la columna, ovado cordiforme, algo constreñido en la parte media, la base algo cordada, el ápice redondeado, subcoriáceo, extendido, 7 × 6 mm; callo único, en forma de "Y", el cual se prolonga en una quilla roma hasta cerca del ápice del labelo. **Columna** recta, gruesa, 4 mm de largo. **Clinandrio** reducido, entero. **Antera** 4 locular, reniforme, cóncava con una quilla roma al centro y un seno en el ápice. **Polinios** 4, semiovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, del doble de largo que los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales el estigma** cortos, de 1/3 de la cavidad estigmática. **Nectario** profundo, penetrando 1/2 del ovario. **Cápsula** elipsoide, 25-27 mm de largo; cuerpo 22-24 x 10-11 mm; cuello apical no evidente.

Epiphytic, monopodial, scandent or creeping **herb. Roots** produced from the basal nodes of the main stem, and from the branches, filiform, fleshy. **Stems** creeping, branching and successive, cane-like, flexuous, terete, the secondary stems shorter. **Leaves** numerous, distributed throughout the stems; sheath tubular, striated; blade linear-elliptic, apex bilobed, those on the main stem about equal in size, those of the secondary stems shorter, unequal. **Inflorescence** apical, produced from the main stem and the secondary stems, racemose, distichous, lax-flowered; peduncle much reduced. **Floral bracts** conduplicate, slightly shorter to longer than the ovary, ovate. **Ovary** inflated along the apical half, terete. **Flowers** 2-3, simultaneous, the lip always towards the rachis, green, turning orange-brown; fragrance nocturnal, sweet of jasmine. **Sepals** spreading, free, glabrous, subcoriaceous, narrowly elliptic, rounded, with a prominent dorsal keel, 7-veined, the lateral veins divided near the base, margin entire, revolute. **Petals** spreading, glabrous, membranaceous, linear-lanceolate, apex rounded, 3-veined, the lateral veins divided, margin entire, revolute. **Lip** united to the column, ovate-cordiform, somewhat constricted in the middle, the base somewhat cordate, apex rounded, subcoriaceous, spreading; callus "Y" shaped, prolonged into a rounded keel extending nearly to the apex of the lip. **Column** straight, thick, short. **Clinandrium-hood** reduced, entire. **Anther** 4-celled, reniform, concave with a keel running down the center, with an apical sinus. **Pollinia** 4, semiovoid, laterally compressed, subequal; caudicles soft and granulose, twice as long as the pollinia; viscidium semiliquid, transparent. **Rostellum** subapical, slit. **Nectary** deep, penetrating ½ of the ovary. **Capsule** ellipsoid.

OTHER SPECIMENS: COSTA RICA: Alajuela: Alajuela-San Ramón-Río Cataratas y Cataritas, 1000 m, 14 I 1984, *Gómez 20804*, MO! Reserva Biológica Monteverde Trayecto de La Torre a Río Negro, 1600-1700 m, 21 I 1988, *Haber 8037*, CR! San Ramón Reserva Biológica Alberto, Cuenca del Río San Lorencito, 850-1000 m, *Hoffmann s.n.*, USJ! SW slope of Rio Sarapiqui canyon, 760 m, 19 XI 1990, *Ingram 737*, SEL! Rio Peñas valley near Refugio Aleman, 850-950 m, 12 XII 1989, *Morris 4051*, SEL! Along road from San Ramon northward through Balsa, ca. 13.8 km N of bridge over Quebrada Volio and ca. 4.6 km N. of bridge over (apparently) Rio Balsa, at small stream (Rio San Luis), 900-1000 m, 29 VIII 1979, *Stevens 13713*, MO! **Cartago:** Fila de La Cordillera de Talamanca, 1 km al sur de Casa Mata, 1950 m, 05 XII 1982, *Hágsater 6313*, AMO! (Illustration voucher.) CR! Illustration MEXU! Cerro de La Carpintera, 1500-1850 m, 01 II 1924, *Standley 35648*, AMES! F! US! **Guanacaste:** Cantón de Abangares 5 Km N Monteverde, Western margin of Reserva Biológica Monteverde, junction of road to San Gerardo Valley with Río Negro, 1550 m, 23 XII 1988, *Haber 8935*, CR! **Heredia:** Yerba Buena, northeast of San Isidro, ca. 2000 m, 22 II 1926, *Standley 49116*, AMES! Ibid. *49120*, AMES! Ibid. *49252*, AMES! Ibid. *50160*, AMES! Ibid. *50165*, AMES! Ibid. *50179*, AMES! Ibid. *50246*, AMES! Cerro de Zurqui, northeast of San Isidro, 2000-2400 m, 03 III 1926, *Standley 50727*, AMES! Ibid. *50732*, AMES! Ibid. *50740*, AMES! Ibid. *50751*, AMES! Ibid. *50773*, AMES! Ibid. *50799*, AMES! Ibid. *50838*, AMES! Cerro de Las Lajas, north of San Isidro, 2000-2400 m, 07 III 1924, *Standley 51459*, AMES! Ibid. *51501*, AMES! Cerro de Las Caricias, north of San Isidro, 2000-2400 m, 11 III 1926, *Standley 52306* AMES! Ibid. *52396*, AMES! Ibid. *52464*, AMES! Ibid. *52491*, AMES! **Puntarenas:** Reserva Biológica Monteverde, Refugio Veracruz, Finca Los Salazar, Río Veracruz, Vertiente Pacífica, 1500 m, 09 I 1990, *Bello 1727*, INB! Monteverde Reserve, Cerro Amigos in area of TV towers, 1600-1700 m, 10 X 1985, *Haber 3470*, MO! Monteverde Cloud Forest Reserve; continetal divide near TV towers, 1600-1800 m, 28 I 1986, *Haber 4343*, MO! Puntarena-Alajuela, Around Monteverde reserve, 1450-1650 m, 31 X 1975, *Burger 9741*, F! **San José:** Vazquéz de Coronado Parque Nac. Braulio Carrillo; Zurqui Station; about 2 km SW of Station, 1780 m, 13 XII 1990, *Ingram 786*, AMO! CR! F! K! MO! SEL! USJ! San Isidro, I 1881, *Lehmann 1265*, G x5! La Palma, ca. 1600 m, 03 II 1924, *Standley 33087*, AMES! Ibid. *33177*, AMES! Zurqui, 2000-2500 m, 13 II 1926, *Standley 48157*, AMES! Ibid. *48244*, AMES! Ibid. *48300*, AMES! Ibid. *48327*, AMES!

DISTRIBUTION AND ECOLOGY: Endemic to Costa Rica, on the Cordillera Central, along the Caribbean slope near the continental divide, in rain forest and cloud forest, 750-1800 m altitude. Flowering generally from January to March, rarely in November and December.

RECOGNITION: *Epidendrum flexicaule* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Flexicaule Subgroup which has a stragling plant habit, where the main stem is not very evident, and the sepals have a dorsal keel which is generally prominent. The species is recognized by the long, narrow, linear-elliptic leaves up to 8.2 x 0.8 cm leaves, and has very similar copper-green though larger flowers, the sepals 9-12 mm long and a wide lip, 7 x 6 mm, the floral segments rounded at the apex. It is similar to *Epidendrum stevensii* which is vegetatively very similar, the smaller, green flowers, sepals 6-8 mm long, acute floral segments, with the lip triangular, narrowed above the middle, apex acute. *Epidendrum modestiflorum* has consistently shorter (< 5 cm), wider leaves, (up to 15 mm), the relatively large green flowers, sepals 11 mm long, the lip constricted below the middle, 6.4-4.5 mm, and the deep nectary without forming a prominent vesicle. *Epidendrum veraguasense* Hágsater from Panama, has large, white flowers, a larger lip, 8 x 6 mm, constricted above the middle, and the nectary only penetrates half the ovary and forms a prominent vesicle behind the perianth.

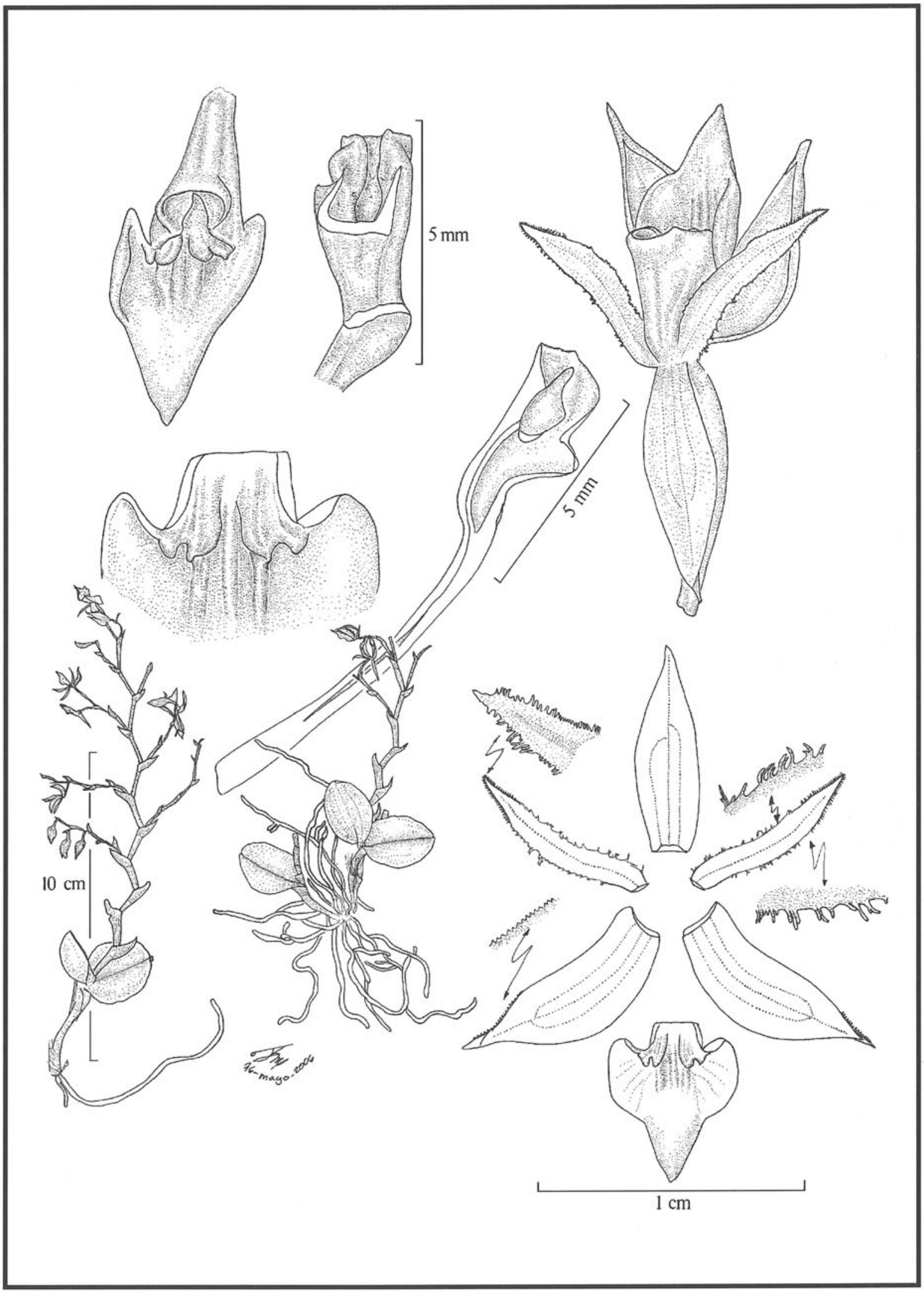


CONSERVATION STATUS: Apparently very common in central Costa Rica.

ETYMOLOGY: From the Latin *flexuosus* zigzag, and *caulis*, stem, in reference to the flexuous stem.

REFERENCES: Hágsater, E., 1992. Nuevas especies del complejo *Epidendrum modestiflorum* de Costa Rica y Panamá. **Orquídea (Mexico City)** 12(2): 281-295. 1992.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM FLEXUOSISSIMUM C.Schweinf.

Plate 1124

EPIDENDRUM FLEXUOSISSIMUM C.Schweinf., Bot. Mus. Leafl. 14(3): 55. 1949.

Type: PANAMÁ: Coclé: Cerro Pajita, hills north of El Valle, 1100 m, 27 October 1946, ***Paul H. Allen 3780.*** Holotype: AMES! (Illustration K!) Isotypes: BM! G! MO! (Illustration voucher).
Epidendropsis flexuosissima (C. Schweinf.) Garay & Dunsterv., Venezuelan Orchids Illustrated 6: 39. 1976.

Hierba epífita, simpodial, cespitosa, de 8-18.5 cm de alto. **Raíces** basales, carnosas, glabras, 0.3-1.1 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, erectos a levemente flexuosos, 1-3.5 [5] cm de largo; cubiertos en su totalidad por vainas tubulares no foliares, algo infladas y fibrosas con el tiempo, 0.7-1.5 cm de largo. **Hojas** 2[3], agregadas en el ápice del tallo, articuladas, extendidas; vainas tubulares, finamente estriadas, 2-3.2 x 1.9-2.7 mm; lámina ovada a orbicular, raramente angostamente elíptica, coriácea, el ápice redondeado, ocasionalmente diminutamente apiculado, margen entero, [0.5]1.5-5 x 0.6-2.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada (muy raramente racemosa), erecta, dística, 5-14.5 cm de largo; provista de 2 a 6 racimos (algunos a su vez ramificados), paucifloros, laxos, 1.5-3 cm de largo, cada racimo con una bráctea basal angostamente triangular, aguda, conduplicada y abrazadora, 4-8 mm de largo; pedúnculo delgado, lateralmente aplanado, bialado, fractiflexo, 3-4.5 cm de largo; provisto de 2-6 brácteas prominentes, triangulares, agudas a cortamente acuminadas, conduplicadas, amplexicaules, 5-10 mm de largo; raquis lateralmente aplanado, bialado, fractiflexo, 3-9.5 cm de largo. **Brácteas florales** mucho más cortas que el ovario, triangulares, agudas, abrazadoras, 2.5-3.5 mm de largo. **Flores** 3 a 5 por racimo, simultáneas, no resupinadas, dísticas, de color verde a verde amarillento, sin datos de fragancia. **Ovario** terete, delgado, no inflado, liso, 8-9 mm de largo. **Sépalos** libres, cortamente acuminados, aristados, 3-nervados, las nervaduras laterales unidas en el ápice a la nervadura central, 7-9 x 2.2-3.2 mm; el **dorsal** algo reflexo, angostamente oblanceolado, margen entero; los **laterales** entreabiertos, elíptico lanceolados, falcados, margen superior diminutamente papiloso en el ápice. **Pétalos** extendidos, libres, lineares, cortamente acuminados, 1-nervados, ligeramente falcados, margen densamente ciliado, cada cilio septado, raramente furcado, 6-8 x 1-1.2 mm. **Labelo** unido a la columna, 3-lobado, base cordada, margen entero, 4.2-5.4 x 4-5 mm; bicalloso, los callos pequeños, delgados, laminares, bidentados en el ápice, ocultos por el ápice de la columna, bicuniculado; disco provisto de 3 quillas delgadas, lisas, bajas; lóbulos laterales semiovados, redondeados, algo carnosos, ligeramente cóncavos, abrazando levemente a la columna en posición natural, 1.5-2 x 1.6-2.8 mm; lóbulo medio triangular, agudo, muy carnoso, 1.5-2.2 x 1.2-2 mm. **Columna** delgada, recta, 3.5-4 mm de largo. **Clinandrio** prominente (aunque sin sobrepasar el ápice de la columna), margen entero. **Antera** anchamente ovada, con un par de dientes, pequeños en el ápice, 2-locular. **Polinios** 2, obovoides; caudículas suaves y granulosas, casi tan largas como los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** sin penetrar el perianto, gradualmente más angosto hacia la base, no inflado, no ornamentado. **Cápsula** angostamente elipsoide; pedicelo delgado, 4.5-6 mm de largo; cuerpo, 8.5-10 x 4-4.3 mm; cuello apical sésil, con el perianto persistente.

Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, glabrous, thin. **Stems** simple, cane-like, terete, thin, erect to slightly flexuous; totally covered by tubular, non-foliaceous, somewhat inflated sheaths, becoming fibrous with time. **Leaves** 2, aggregate at the apex of the stem, articulate, spreading; sheaths tubular, minutely striated; blade ovate to orbicular, rarely narrowly elliptic, coriaceous, apex rounded, occasionally minutely apiculate, margin entire. **Inflorescence** apical, paniculate (rarely racemose), erect, distichous, provided with 2-6 racemes, these sometimes themselves branching, laxly few-flowered, each raceme subtended by a narrowly triangular, acute, conduplicate bract; peduncle thin, laterally compressed, two-winged, fractiflex, provided with 2-6 prominent, triangular, acute to short-acuminate, conduplicate bracts; rachis laterally compressed, two-winged, fractiflex. **Floral bracts** much shorter than the ovary, triangular, acute. **Flowers** 3-5 per raceme, simultaneous, non-resupinate, distichous, green to yellowish green. **Ovary** terete, thin, not inflated, smooth. **Sepal** free, short acuminate, aristate, 3-veined, the lateral veins united at the apex with the central vein, margin entire; the dorsal sepals somewhat reflexed, narrowly oblanceolate, the lateral sepals partly spreading, elliptic-lanceolate, falcate, the upper margin minutely papillose towards the apex. **Petals** spreading, free, linear, short acuminate, 1-veined, slightly falcate, margin densely ciliate, the cilia septate, rarely furcate. **Lip** united to the column, 3-lobed, base cordate, margin entire; bicallose, the calli small, thin, laminar, apex bidentate, hidden beneath the apex of the column, with two cunicula; disc provided with 3 thin, smooth, low keels; lateral lobes semiovate, rounded, somewhat fleshy, slightly concave, somewhat embracing the column in natural position; midlobe triangular, acute, very fleshy. **Column** thin, straight, short. **Clinandrium** prominent (though not surpassing the apex of the column, margin entire. **Anther** widely ovate, with a pair of small teeth at the apex, 2-celled. **Pollinia** 2, obovoid; caudicles soft and granulose, nearly as long as the pollinia. **Rostellum** apical, slit. **Nectary** short, without penetrating the ovary, gradually narrower towards the base, not inflated, smooth. **Capsule** narrowly ellipsoid, pedicel thin, apical neck obsolete, and the perianth persistent.

OTHER SPECIMENS: PANAMÁ: Coclé: El Valle de Antón, Cerro Gaital, 26 XI 1985, *de Nevers 6359*, CAS! NY! MEXU! **Panamá:** Cerro Jefe, 2700 ft, 8 II 1966, *Baker 3395*, MO! Ibid. 1000 m, 30 XI 3943, *Churchill 3943*, MO! Ibid. 12 XI 1967, *Dressler 3150*, Herb. RLD! MO! Ibid. 11 XI 1969, *Dressler 3767*, Herb. RLD! K! MO! Ibid. 24 XII 1977, *Folsom 7110*, MO! Ibid. 1000 m, 6 XII 1981, *Knapp 2251*, AMO x2! SEL! Ibid. ca. 1000 m, 10 XII 1974, *Mori 3609*, MO! SEL x2! Ibid. 850-900 m, 7 X 1980, *Sytsma 1433*, MO! Ibid. 26 IX 1975, *Witherspoon 8530*, MO!

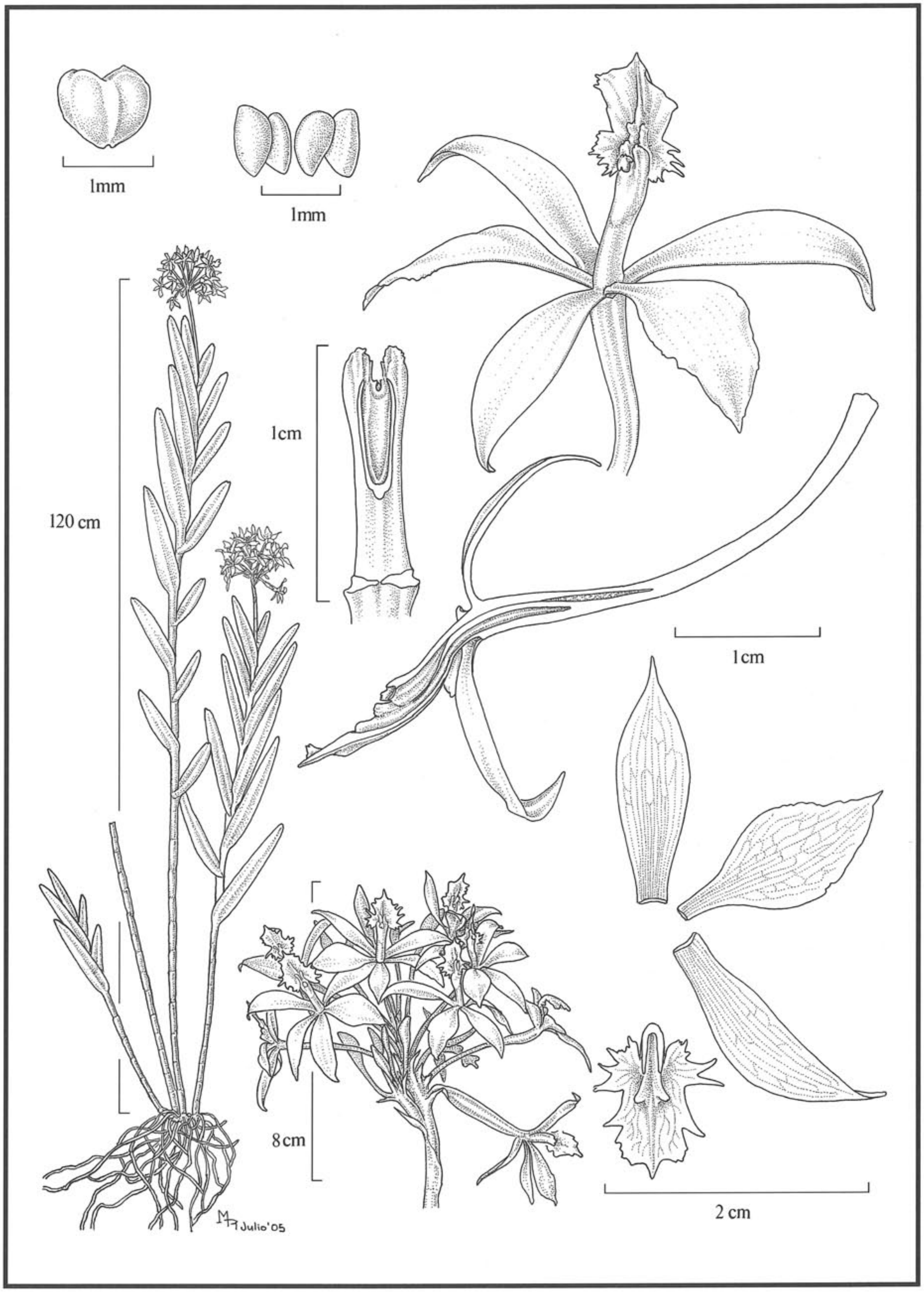
DISTRIBUTION AND ECOLOGY: Endemic to Central Panama, epiphyte, at 800-1000 m altitude. Flowering from October to December.

RECOGNITION: *Epidendrum flexuosissimum* belongs to the Lanium Group which is characterized by rhizomatous plants, the stems cane-like to pseudobublous, leaves generally aggregate towards the apex, flowers non-resupinate, more or less pubescent, pollinia 2 or 4. The species is recognized by the short stems (1-3.5 [5]cm tall) with 2 ovate-orbicular (rarely narrowly elliptic), spreading leaves, paniculate inflorescence with the peduncle and rachis fractiflex, greenish to yellowish flowers, linear petals with the margin densely ciliate, lip bicallose, each callus bidentate, with three short keels, and the midlobe triangular. *Epidendrum ciliipetalum* (Garay) Hágsater & E. Santiago has longer stems (7 cm tall), the two apical leaves narrowly ovate-oblong, subacute and conduplicate, the inflorescence with a single branch, peduncle straight, petals and sepals reflexed and the lip bicallose, the apex of each callus minutely 3-lobed. *Epidendrum flexuoecallosum* Hágsater & E. Santiago has up to 6.5 cm long stems with 3-6, elliptic-lanceolate leaves distributed throughout, spreading, linear petals and an ecallose lip with two short cunicula at the base.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *flexuosus*, zigzag, fractiflex, bent alternately in opposite directions, and the superlative -*issimus*, thus most zigzag, in reference to the peduncle of the inflorescence.



EPIDENDRUM FLEXUOSUM G.Mey.

Plate 1125

EPIDENDRUM FLEXUOSUM G.Mey., Prim. Fl. Esseq.: 260. 1818.

Type: GUYANA: in arboribus ad ripas rivi Arowabischkreek, ***G. Meyer s.n.***, Holotype: GOET.

Synonyms: *Epidendrum imatophyllum* Lindl., Gen. Sp. Orchid. Pl. 106. 1831. Type: GUYANA: ***Hooker s.n.***, Holotype: K!

Epidendrum imetrophyllum Paxton, Mag. Bot. 4: 119. 1838, *nomen.*

Epidendrum palpigerum Rchb.f., Gard. Chron. n.s. 12: 40. 1879. Type: MEXICO: Hort. ***W. Bull 332***, Holotype: W!

Epidendrum persimile Schltr., Repert. Spec. Nov. Regni. Veg. Beih. 7: 142-143. 1920. Type: COLOMBIA: Cauca, ***Madero s.n.***, Holotype: B (destroyed), Lectotype* (here designated): illustration in Mansfeld, Repert. Spec. Nov. Regni Veg. Beih. 57. t. 50, Nr. 193. 1929. AMES 36065!

Epidendrum lorifolium Schltr., Repert. Spec. Nov. Regni. Veg. Beih. 17: 35. 1922. Type: PANAMA: bei Panamá City, ***C. W. Powell 138***, Holotype: B (destroyed), Lectotype (designated by Christenson, 1991): AMES 23962! Isolectotypes: AMES 27945! K! MO! Illustration of flower: in Mansfeld, Repert. Spec. Nov. Regni Veg. Beih. 59: t. 52, no. 205. 1931.

Hierba epífita, mirmecófila, simpodial, cespitosa, de 37-113 cm de alto. **Raíces** basales, carnosas, delgadas, blancas, 0.7-1.5 mm de grosor. **Tallos** tipo caña, sencillos, teretes en la base, lateralmente aplanados hacia el ápice, erectos, rectos, 22-95 x 0.2-1.0 cm. **Hojas** 11-25, distribuidas a lo largo del tallo, articuladas, dísticas, suberectas; vaina tubular, finamente estriada, 15-55 mm de largo; lámina linear oblonga a linear lanceolada, coriácea, ápice obtuso, margen entero, extendido, [2.5] 5-19 x 0.4-2.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa a pluriracemosa, erecta, generalmente pluriflora, densa, 8-31 cm de largo; pedúnculo terete, delgado, 3-18 cm de largo; cubierto casi en su totalidad por 2-7 brácteas, tubulares, agudas a acuminadas, escariosas, las basales parcialmente imbricadas, las apicales algo espaciadas, decrecientes en tamaño, 18-60 mm de largo; raquis de 2.2-13 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, agudas a acuminadas, abrazadoras, 3-13 mm de largo. **Flores** 20-70 o más, sucesivas (aunque varias de ellas abierta de manera simultánea), no resupinadas, lila rosado a magenta; sin fragancia. **Ovario** terete, delgado, no inflado, 23-45 mm de largo. **Sépalos** libres, extendidos, ligeramente reflexos en la mitad apical, acuminados, 11-nervados, margen entero, extendido; el dorsal angostamente elíptico obovado, unguiculado, 15-19 x 3.4-5.5 mm; los laterales oblongo elípticos, oblicuos, 15-18 x 4-6 mm. **Pétalos** libres, extendidos, elíptico obovados, unguiculados, acuminados, 5-nervados, las nervaduras muy ramificadas en la mitad apical, dando la apariencia de ser 10 nervados, margen eroso, extendido, 13-18 x 3.5-8 mm. **Labelo** unido a la columna, entero a obscuramente trilobado, oblongo, ápice truncado, apiculado, margen irregularmente laciniado fimbriado en la mitad basal, la mitad apical con el margen subentero a eroso, 6-8.5 x 6-8 mm; bicalloso, los callos prominentes, laminares, delgados; disco unicarinado, la carina intercallosa, alargada hasta el seno apical. **Columna** delgada, ligeramente arqueada, ápice con un par de dientes laterales redondeados, prominentes, carnosos, asemejando un par adicional de callos, 8-10 mm de largo. **Clinandrio** corto, margen irregularmente dentado. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas no vistas. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** poco profundo, penetrando 1/5 del ovario, no inflado, papiloso. **Cápsula** elipsoide cuerpo 2.0-2.8 x 1.0-1.7 cm; pedicelo, 9-12 mm de largo; cuello apical 12-14 mm de largo.

Epiphytic, myrmecophyllous, sympodial, caespitose **herb. Roots** basal, fleshy, thin, white. **Stems** cane-like, simple, terete at the base, laterally compressed above, erect, straight. **Leaves** 11-25, distributed throughout the stem, articulate, distichous, suberect; sheath tubular, minutely striated; blade linear-oblong, to linear-lanceolate, coriaceous, apex obtuse, margin entire, spreading. **Inflorescence** apical, racemose to pluriracemose, erect, generally densely many-flowered; peduncle terete, thin, long, nearly totally covered by 2-7 tubular, acute to acuminate, scarious, partly imbricating bracts, progressively spaced and smaller. **Floral bracts** much shorter than the ovary, narrowly triangular, acute to acuminate. **Flowers** 20-70 or more, successive, though several are usually open at one time, non-resupinate, pink-lilac to magenta; without fragrance. **Sepals** free, spreading, the apical half slightly reflexed, acuminate, 11-veined, margin entire, spreading; the dorsal sepals narrowly elliptic-obovate, unguiculate; the lateral sepals oblong-elliptic, oblique. **Petals** free, spreading, elliptic-obovate, unguiculate, acuminate, 5-veined, the veins much branched towards the apical half, so as to appear 10-veined, margin erose, spreading. **Lip** united to the column, entire to obscurely 3-lobed, oblong, apex subtruncate, apiculate, margin irregularly laciniate-fimbriate along the basal half, the apical half subentire to erose; bicallose, the calli prominent, laminar, thin; disc one-keeled, the keel arising in between the calli and reaching the apical sinus. **Column** thin, slightly arching, apex with a pair of lateral prominent, fleshy, rounded teeth, lika a pair of additional keels. **Clinandrium-hood** short, margin irregularly dentate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** subapical, slit. **Nectary** shallow, penetrating 1/5th of the ovary, narrow, papillose. **Capsule** ellipsoid, with a short, thin pedicel and apical neck.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Mexico (Veracruz, Oaxaca, Chiapas, Campeche, Quintana Roo, Tabasco and Yucatán), Belize, Guatemala, Honduras, Nicaragua, Costa Rica, Panamá, Trinidad & Tobago, Venezuela, Guayana, Surinam, French Guyana, Brazil, Ecuador, Colombia, Peru and Bolivia; growing from sea level to 1300 m de altitud, mainly between 100-700 m de altitud. Flowering throughout the year, mainly from February to August. The species is always epiphytic, and associated with ants, which frequently form nests in the mass of roots, often in association with *Coryanthes spp.* In Veracruz, native ants have been recorded as *Azteca sp.*, with *Canpanotus sp.* colonizing the plant under semi-cultivation [G. Salazar, pers. comm., 1985]

RECOGNITION: *Epidendrum flexuosum* belongs to the Schistochilum Group, Calanthum subgroup and Flexuosum complex, characterized by the caespitose habit, numerous oblong, coriaceous leaves, usually elongate peduncle of the inflorescence with a short raceme of flowers, bicallose lip and caudicles of the pollinia, like a pile of roof-tiles. The species is recognized by the epiphytic plants with linear-oblong leaves, purple, non-resupinate flowers, obovate, unguiculate petals with the margin dentate, and the lip subentire, rectangular-oblong to somewhat 3-lobed. *Epidendrum blepharistes* Barker ex Lindl. has similar narrow leaves, but the stems are thickened-fusiform at the base, and the inflorescence is paniculate, with small white or purple pink, resupinate flowers, the lip clearly and deeply 3-lobed. *Epidendrum apatotylosum* Hágsater, endemic from Costa Rica, also has non-resupinate flowers but these are purple-red, the leaves oblong-elliptic, and the lip wider, flabellate. *Epidendrum radicans* Pavon ex Lindl. has creeping, terrestrial plants, with the roots produced all along the stems, the resupinate flowers are orange-red, and the leaves are ovate-elliptic, the petals elliptic with an entire margin, and the lip deeply 3-lobed.



***NOTE:** The Vienna Code, (Art. 37.4) does not permit the use of illustrations as type of a name of a new species after 1 January 2007. However this lectotipification refers to a previously validly published new species, so the code does not apply.

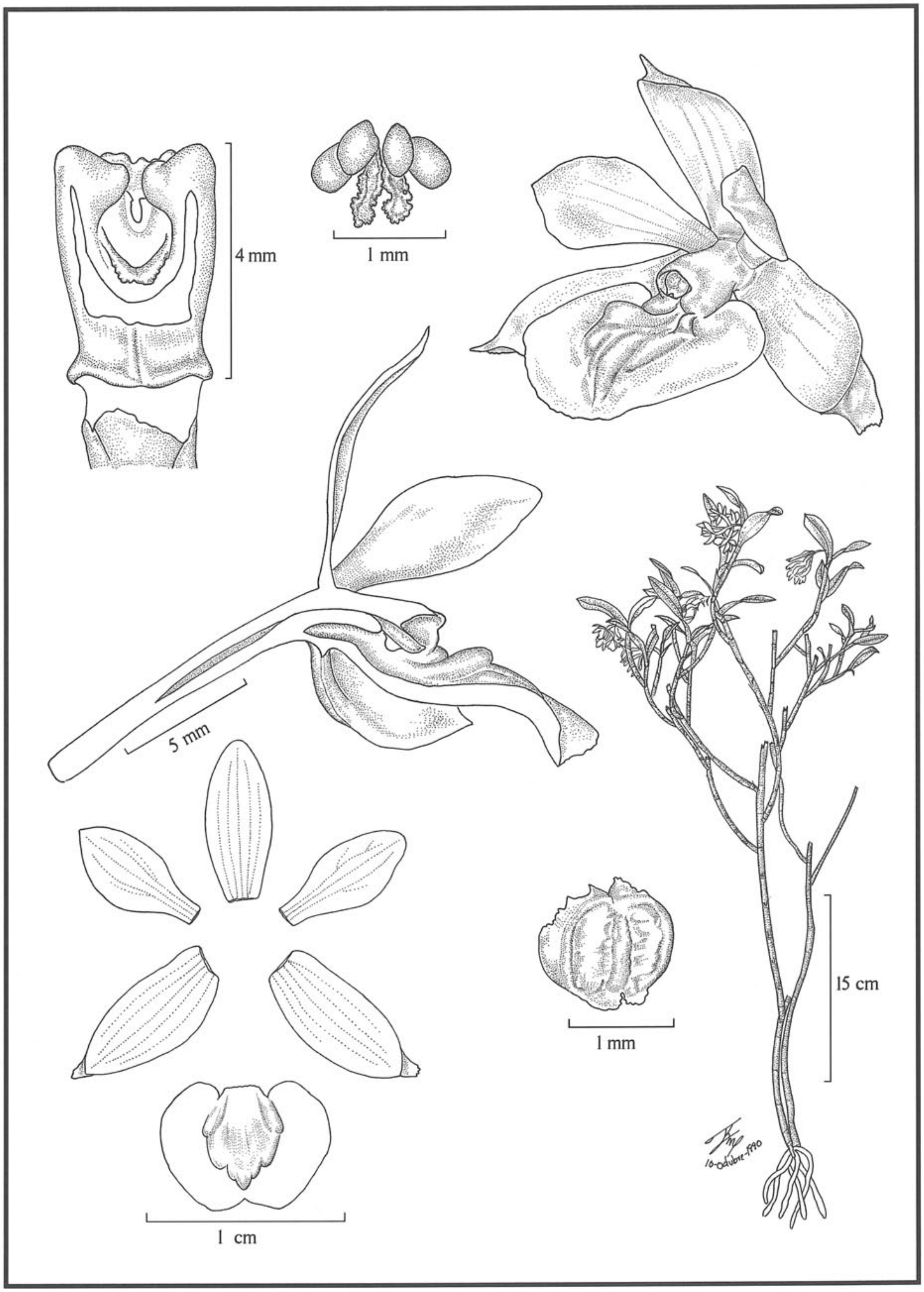
CONSERVATION STATUS: NT. The species is widespread and common, often growing on branches overhanging streams.

ETYMOLOGY: From the Latin *flexuosus*, in reference to the stems which are somewhat wavy, bent alternatively in opposite directions.

REFERENCES: Ames, O. 1923. Additions to the Orchid Flora of Central America in **Schedul. Orchid.** 4: 43; Ames, O. F.T., Hubbard, and C. Schweinfurth, 1936. **The Genus Epidendrum in the United States and Middle America:** p. 106-107; Ames, O. and D. S. Correll, 1952. **Orchids of Guatemala. Fieldiana Botany:** 26: 335; Bechtel, H. et al. 1981. **The Manual of Cultivated Orchid Species**, MIT Press, p. 139; Behar, M. and O. Tinschert, 2000. **Guatemala y sus *Orquídeas*,** p. 191; Chiron, G. R., & R. Bellone, 2005. **Les orchidés de Guyane française,** p. 168, photo 124; Dodson, C. & D. E. Bennett, in C. Dodson, 1989. **Icon Pl. Trop., Series II**: pl. 63; Dunsterville G. C. K. and L. A. Garay, 1966. *Epidendrum imatophyllum* in **Venezuelan Orchids Illustrated**, Vol. 4: 90-91; Escobar R. 1994. **Orquídeas Nativas de Colombia Vol. 5:** p. 756, photo 867, Medellín, Colombia; García-Cruz, J. and L. Sánchez, 1999. **Flora de Veracruz**, Orchidaceae II: *Epidendrum:* 40-42; Hágsater, E. 2005. *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 293, San José C.R. Editorial de la Universidad de Costa Rica; Hamer, F. 1982. *Epidendrum imatophyllum* in C.H. Dodson, **Icon. Pl. Trop.** 8: pl. 719; Hamer, F. 2001. *Orchidaceae* Juss., in Stevens, W. D. et al., *eds.*, **Flora de Nicaragua** 85(2): 1684. Missouri Botanical Garden Press, St. Louis, Missouri, U.S.A.; Horich, C. K. 1977. **Orquideología** vol. XII, 2-3: 209-226; Mcleish, I., N. R. Pearce & B. R. Adams, 1995. **Native Orchids of Belize**, p. 185; Fig. 187, photo 162-163; Missouri Botanical Garden Press, St. Louis, Missouri, U.S.A; Misas, G. 2005. ***Orquídeas de la Serranía del Baudó, Chocó-Colombia***: 184-185. Corporación Capitalina de Orquideología, Bogotá, Colombia; Mora, D. E. & J. T. Atwood in J. T. Atwood, 1993. *Epidendrum imatophyllum*, **Icon. Pl. Trop.** 16: pl. 1525; Schweinfurth, C. 1959. **Fiendiana Bot.:** Orchids of Perú: 458-459; Schweinfurth, C. 1967. **Memoirs of the New York Botanical Garden:** *Orchidaceae of the Guayana Highland*: 14(3): 139; Soto, M. et al., 2007, **Orchids of Mexico**, Digital Catalogue: photos: 0333-0334; *Williams*, L. O. 1941. Ann. Missouri Bot. Gard. (**Flora of Panama, *Orchidaceae***) 28: 287.

Authors: E. Santiago & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM FRUTICOSUM Sessé et Mociño ex Lindl.

Plate 1126

EPIDENDRUM FRUTICOSUM Sessé et Mociño ex Lindl. [as Pav. ex Lindl.], Gen. et Sp. Orch. Pl. 101. 1831.

Type: MEXICO: "Epidendrum fruticosum de México" ***Sessé y Mociño*** in *Herb. Pavón s.n.* Holotype: Herb. Lambert, BM! Tracing W-R 49708! Isotype: FI!

Synonyms: *Epidendrum viejii* Rchb. f., Bonplandia 3: 220. 1855. Type: NICARAGUA: in monte El Viejo, [volcán San Cristóbal, fide Hamer, 2001], ***Oersted s.n.*** [*6927* according to Christenson, 1996]. Holotype: C. In addition there are detailed drawings (as "Epidendrum No. 19") at C, which were the basis for Reichenbach's illustration in Xenia Orchidaceae 1: t. 48, fig. II [fide Christenson, ibid.]. Isotype: W-R 49707, pro parte, a single flower and leaf. *Epidendrum fastigiatum* Sessé et Mociño ex Rchb.f., nomen illeg.: Bonplandia 3: 220. 1855. Based on MEXICO: ***Sessé & Mociño s.n. as Pavón 1818,*** W-R 49707, pro parte, the specimen! [tracing of habit by Schlechter, labeled as *E. viejii*, AMES 70983!, floral details taken from *Oersted*] Duplicates: G! MA! [tracing, still with flowers, at AMES 43474! Photo (flowers no longer visible): F!] Non *E. fastigiatum* Lindl., Epidendrum, Folia Orch. pg. 56, 1853; nec. Ibid., pg. 71, 1853 [=*E. jamiesonii* Rchb.f.] *Epidendrum lucidum* Schltr. Repert. Spec. Nov. Regni Veg. 15: 206. 1918. Type: GUATEMALA: Nov. 1865. ***C. G. Bernoulli und Cario 458.*** Holotype: B (destroyed). Lectotype* (here designated): tracing of the Holotype, AMES!

Hierba epífita o raramente litófita, erecta o algo péndula, formando arbustos de 25-100 cm de alto. **Raíces** producidas en la base del tallo inicial, carnosas, delgadas, 1-2 mm de grosor. **Tallos** ramificados, tipo caña, teretes, delgados, rectos, ascendentes, heteromodulares por sustitución, los tallos distales disminuyendo marcadamente en tamaño en comparación con los basales, 2.5-15.5 x 0.1-0.3 cm; cubiertos casi en su totalidad por vainas tubulares (no foliares) escariosas y fibrosas con el tiempo, 21-32 mm de largo. **Hojas** 2-3, agrupadas cerca del ápice de cada tallo, suberectas, articuladas, dísticas; vaina tubular, finamente estriada, 6-14 x 0.7-2 mm; lámina oblongo elíptica a angostamente lanceolada, aguda a subobtusa, con una quilla dorsal diminuta, coriácea, margen entero, extendido, 3.3-11 x 1-3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueado nutante, pauciflora, densa, corta, 1.5-5.5 cm de largo; pedúnculo subterete, delgado, 0.5-3 cm de largo; provisto de 1 o 2 brácteas linear lanceoladas, acuminadas, abrazadoras, 8-22 mm de largo; raquis corto, delgado, algo, fractiflexo, 1-3 cm de largo. **Brácteas florales** prominentes, más largas que el ovario, linear lanceoladas, acuminadas, abrazadoras, 5-14 mm de largo. **Flores** 3-6 [9-16], simultáneas, resupinadas, amarillo verdosas con el callo generalmente púrpura rojizo a vino purpúreo intenso con el ápice de la columna blanquecino; sin fragancia. **Ovario** subterete, delgado, no inflado, liso, 6-10 mm de largo. **Sépalos** libres, entreabiertos, ligeramente cóncavos, ovado elípticos, 5-nervados, ápice redondeado, margen entero, extendido, 9-11 x 3.5-5 mm; el **dorsal** con una quilla dorsal baja; los **laterales** ligeramente oblicuos con una quilla dorsal alta, denticulada, muy prominente. **Pétalos** libres, entreabiertos, anchamente oblanceolados, unguiculados, subagudos a redondeados, 3-nervados, las nervaduras laterales ramificadas, margen entero, extendido, 7-9 x 3.2-4.8 mm. **Labelo** unido a la columna, entero, reniforme, cordado en la base y anchamente retuso en el ápice, margen entero, extendido, 6-7.5 x 8.5-9 mm; bicalloso, los callos prominentes, laminares, divaricados; disco con estructura carnosa, ancha y pentalobulada (con los lóbulos de tamaño decreciente del centro hacia los costados), sin alcanzar el seno apical del labelo. **Columna** recta, ligeramente engrosada hacia el ápice, 4 mm de largo. **Clinandrio** prominente (aunque sin sobrepasar el ápice de la columna), margen crenado. **Antera** reniforme, con una quilla dorsal, 4-locular. **Polinios** 4, ovoides; caudículas suaves y granulosas ligeramente más largas que los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, de ½ del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando muy ligeramente detrás del perianto, no inflado, no ornamentado. **Cápsula** elipsoide, pedicelo delgado, 4.5-5.5 mm de largo; cuerpo 14-15 x 8-9.5 mm; cuello apical corto, 1.5 mm de largo.

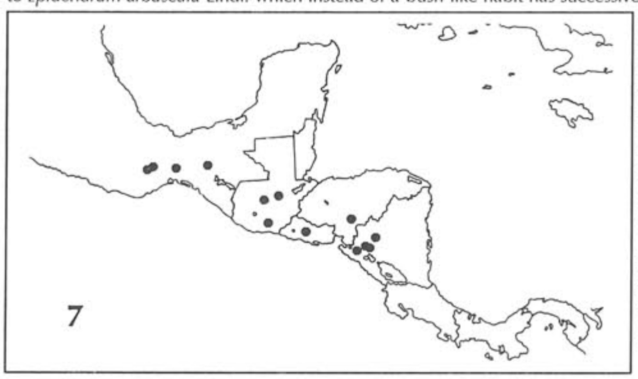
Epiphytic or rarely lithophytic, simpodial, branching, erect to pendent, bushy **herb.** **Roots** from the base of the basal stem, fleshy, thin. **Stems** branching, cane-like, terete, thin, straight; ascending, heteromodular by substitution, the distal stems diminishing markedly in size compared to the basal stems, nearly totally covered by tubular, scarious sheaths, becoming fibrous with time. **Leaves** 2-3, aggregate towards the apex of the each stem, suberect, articulate, distichous; sheath tubular, minute striated; blade oblong-elliptic to narrowly lanceolate, acute to subobtuse, with a minute dorsal keel, coriaceous, margin entire, spreading. **Inflorescence** apical, flowering only once, racemose, arching-nutant, densely few flowered, short; peduncle subterete, thin, provided with 1-2 linear-lanceolate, acuminate, amplexicaul bract; rachis short, thin, somewhat zigzag. **Floral bracts** prominent, longer than the ovary, linear-lanceolate, acuminate, amplexicaul. **Flowers** 3-6[9-16], simultaneous, resupinate, greenish yellow with the callus generally reddish purple or intense wine purple, the apex of the column whitish; without fragrance. **Ovary** subterete, thin, not inflated, smooth. **Sepals** free, partly spreading, slightly concave, ovate-elliptic, 5-veined, apex rounded, margin entire, spreading; the dorsal sepals with a low dorsal keel, lateral sepals slightly oblique, with a high dorsal, denticulate, very prominent keel. **Petals** free, partly spreading, widely oblanceolate, unguiculate, subacute to rounded, 3-veined, the lateral veins branching, margin entire, spreading. **Lip** united to the column, entire, reniform, base cordate, apex widely retuse, margin entire, spreading; bicallose, the calli prominent, laminar, divaricate; disc with fleshy, 5-lobed structure, with the lateral lobes shorter than the midlobe which does not reach the apical sinus. **Column** straight, slightly thickened towards the apex. **Clinandrium-hood** prominent, without surpassing the apex of the body of the column, margin crenulate. **Anther** reniform, with a dorsal keel, 4-celled. **Pollinia** 4, ovoid, caudicles soft and granulose, slightly longer than the pollinia. **Rostellum** subapical, slit. **Nectary** shallow, slightly penetrating the ovary, not inflated, smooth. **Capsule** ellipsoid, pedicel thin, short; apical neck short.

OTHER SPECIMENS: MEXICO: Oaxaca: 7 km después de Juquila Mixes, 1600 m, 3 IV 1996, pressed cult. 16 X 1996, *Jiménez 1729*, AMO x2! UAMIZ! Ibid. *Jiménez 1730*, AMO! Ibid. 5000 ft, 27 XI 1973, *Pollard 1-190-44*, MEXU! Filo del Cerro Guayabitos, 1790 m, 24 X 1996, *Salazar 5769*, AMO! **Chiapas:** a 2.4 km de Rayón, camino a Tapalapa, ca. 1600, 10 IV 1989, pressed cult. 11 XII 1989, *Soto 4934*, AMO x3! (Illustration voucher) Ibid. 28 IX 1992, *Soto 4934*, AMO x2! Ibid. 10 IV 1989, pressed cult. 4 XII 1994, *Soto 4936*, AMO! Ibid. 26 X 1996, *Soto 4936*, AMO! **GUATEMALA:** Without locality, *Skinner 42*, K! W! **Alta Verapaz:** Finca Mocca, 2800 ft, 14 XI 1919, *Johnson 45*, US! E of Tactic, ca. 1450 m, 14 IV 1941, *Standley 92524*, AMES! F! **Guatemala:** San José Pinula, *Archila s.n.*, AMO! Puerta Parada, 1860 m, 22 IX 1977, *Dix s.n.*, UVAL! Puerto Pancho, Sta. Catarina Pimche, 1850 m, pressed cult. 23 IX 1981, *Hágsater 5348*, AMO x2! (Illustration AMO!) Ibid. 12 XI 1984, *Hágsater 5348*, AMO x4! **EL SALVADOR: San Salvador:** Boquerón, Volcán San Salvador, 1800 m, XII 1973, *Hamer 234*, AMES! **HONDURAS: Francisco Morazán:** Carretera de Tatumbla a Tegucigalpa, 1500 m, 17 X 1993, *Linares 801*, MEXU! **NICARAGUA: Estelí:** Faldas del Cerro El Tisey, ca. 1400-1460 m, 6 III 1982, *Moreno 15794*, MO! **Jinotega:** carretera hacia Jinotega, 1200 m, 20 I 1980, *Araquistain 817*, MO! Santa María de Ostuma road to La Fundadora, 1400 m, 7 XII 1958, *Hawkes 2216*, K! S of Río Gusaneras, 1200-1330 m, 16 I 1979, *Stevens 11587*, MO! NW of Aranjuez, 1390 m, 11 XII 1983, *Stevens 22577-A*, MO! **Matagalpa:** Santa María de Ostuma, 1300 m, 8 I 1977, *Molina 31616*, F! Cerro La Carlota a 2 km de la carretera al Tuma, ca. 1040-1100 m, 5 III 1982, *Moreno 15643*, MO! Santa María de Ostuma, 1300-1500 m, 8 I 1963, *Williams 23498*, F! Aranjuez, 1400 m, 5 XII 1973, *Williams 42788*, F!

OTHER RECORDS: MEXICO: Oaxaca: E of Juquila Mixes on Ocotepec, 4-6 IX 1975, *Greenwood 402*, slide, AMO! Ibid. *McCullough 1928*, slide, AMO! Ibid. pressed cult. 7 XI 1963, *Miller s.n.* cult. *Pollard R-36*, flower card, slide and Pollard notes, AMO! Cerro Guayabitos, *Salazar s.n.*, color photo, in M. Soto et al., 2007, Orchids of Mexico, Digital Catalogue: fig. 0335, México, Instituto Chinoín. **GUATEMALA:** Without locality, only indicated as Region 5 (Humid Region), *Behar s.n.*, color photo published in Guatemala and its Orchids, p. 143. **Guatemala:** Puerto Pancho, Sta. Catarina Pimché, 1850 m, *Hágsater 5348*, color photo, in M. Soto et al., 2007, Orchids of Mexico, Digital Catalogue: fig. 0336, México, Instituto Chinoín. **NICARAGUA: Jinotega:** between Santa María de Ostuma and Jinotega Rock Quarry, *Heller 1132*, note, SEL! xerox AMO! Ibid. *Heller 3899*, note, SEL! xerox AMO! Ibid. *Heller 3900*, note, SEL! xerox AMO!

DISTRIBUTION AND ECOLOGY: Ranging from southern Mexico [Oaxaca & Chiapas], Guatemala, Honduras, El Salvador and Nicaragua; epiphytic or rarely lithophytic at [840] 1040-1860 m altitude. Flowering September to January. In fruit January to April.

RECOGNITION: *Epidendrum fruticosum* belongs to the Fruticosum Group which is characterized by the plants with caespitose to creeping habit with thin stems, subcoriaceous leaves, racemose, few-flowered inflorescence, and greenish to purple tinged flowers with the disc of the lip fleshy thickened with 3 rounded keels. The species is recognized by the relatively wide leaves, 1-3 cm wide, greenish yellow to intense wine-purple flowers, partly spreading floral segments, apex rounded, widely oblanceolate petals, 3.2-4.8 mm wide, and the reniform lip, the disc with a thickened, fleshy, 5-lobed structure. *Epidendrum eustirum* Ames, F.T.Hubb. & C.Schweinf. has a similarly thickened disc on the lip, but the plant has a caespitose, unbranched habit, relatively narrow leaves (4-17 mm wide) the green flowers, narrow, oblanceolate petals 1.2-1.5 mm wide. The species is only superficially similar to *Epidendrum arbuscula* Lindl. which instead of a bush-like habit has successive lateral growths with roots at the base of each new stem, sturdier stems and larger leaves and a 3-lobed lip. *Epidendrum propinquum* A.Rich. & Galeotti has a clearly bush-like habit, the stems much branched, narrowly elliptic, acute, leaves up to 1.7 cm wide, greenish-yellow flowers sometimes tinged purple, the margins of the floral segments revolute, oblanceolate-spatulate petals 1.5-2.5 mm wide, and the lip ovate-cordiform to triangular-cordiform.



*NOTE: The Vienna Code, (Art. 37.4) does not permit the use of illustrations as type of a name of a new species after 1 January 2007. However this lectotipification refers to a previously validly published new species, so the code does not apply.

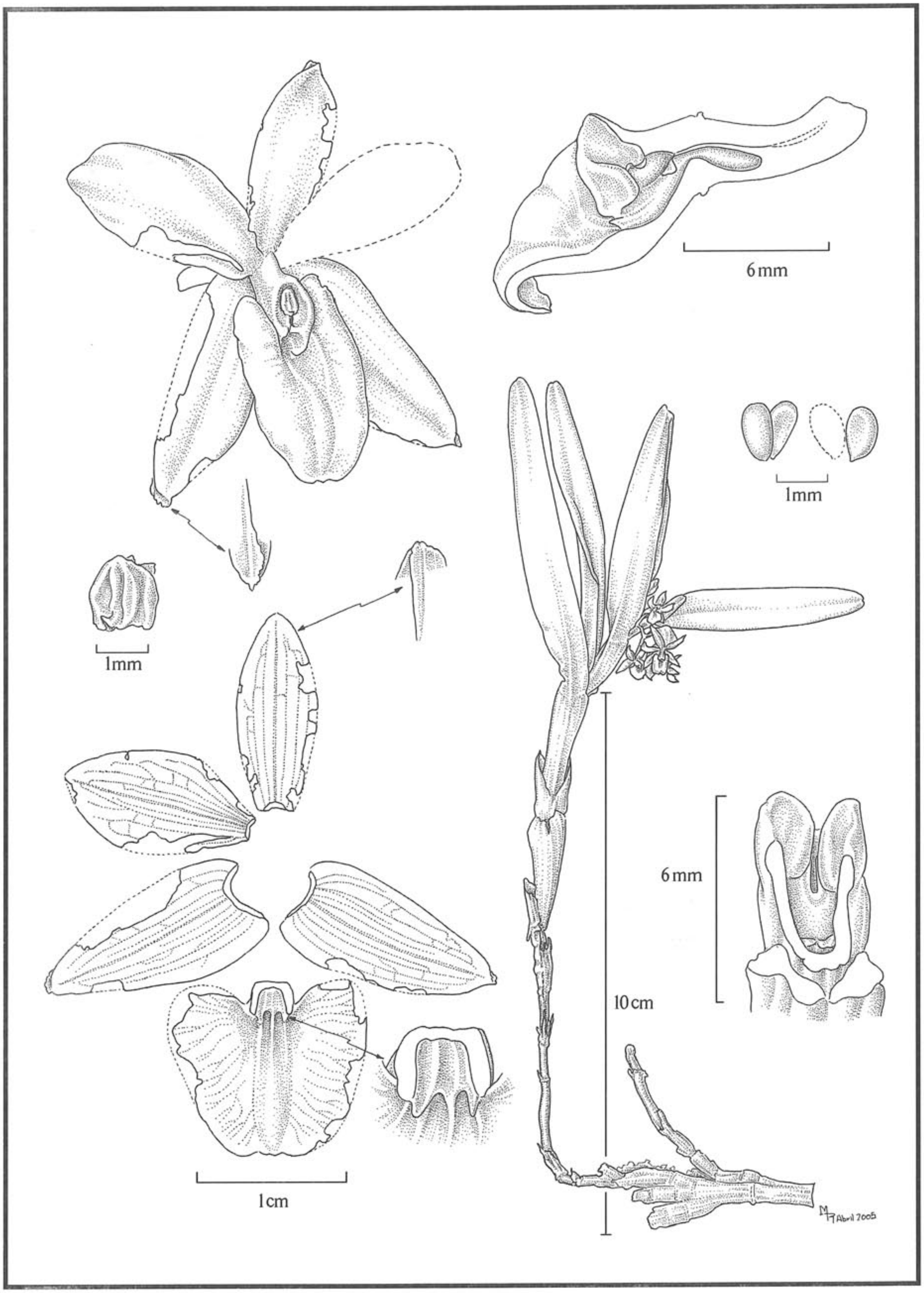
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *fruticosus*, shrubby, bushy, in reference to the branching, bush-like, habit of the species.

REFERENCES: Behar, M., and O. Tinschert, 2000. **Guatemala and its Orchids,** p. 143; Christenson, E. A. 1996. Mesoamerican Orchid Studies VII: A Name change for *Epidendrum viejii*; **Lindleyana** 11(4): 223; Soto, M., et al. 2007. **Orchids of Mexico,** Digital Catalogue: figs. 0335-0336, México, Instituto Chinoín; Hamer, F. 2001. *Orchidaceae* Juss., in W. D. Stevens et al., *eds.*, **Flora de Nicaragua** 85(2): 1696. Missouri Botanical Garden Press, St. Louis, Missouri, U.S.A.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM GIBBOSUM L.O.Williams

Plate 1127

EPIDENDRUM GIBBOSUM L.O.Williams, Ann. Missouri Bot. Gard. 28: 420. 1941.

Type: PANAMÁ: Chiriquí: Casita Alta to Cerro Copete, 2300-3300 m, 10 July 1940, ***R. E. Woodson & R. W. Schery 367.*** Holotype: MO! (Illustration voucher).

Synonym: *Epidendrum acrostigma* Hágsater & García-Cruz, *in* E. Hágsater, L. Sánchez Saldaña & J. García-Cruz (Eds.), Icon. Orchid. (Mexico) 3: pl. 301. 1999. Type: PANAMA: Chiriquí: W end of high N of Barú summit, ca. 3000 m, 8 April 1979, ***B. Hammel, W. D'Arcy, E. C. Hills, S. Schwartz & O. & H. Wolcott 6910.*** Holotype: AMO! (Illustration). Isotype: MO!

Hierba epífita o terrestre, esencialmente monopodial, ramificada arriba, de 100 cm de alto o más. **Raíces** basales, filiformes, 1.5-3 mm de grosor. **Tallos** teretes, tipo caña, ramificados, los tallos nuevos se originan de un entrenudo del tallo anterior, el principal 0.5-1.5 cm de grosor, los tallos secundarios 20-45 x 0.3-0.8 cm. **Hojas** numerosas, distribuidas a lo largo del tallo principal, caedizas cuando el tallo se ramifica, las hojas de las ramas persistentes; vaina tubular, rugosa, papirácea, blanquecina, 1-4.5 cm de largo; lámina angostamente elíptico lanceolada, oblicuamente bilobada, las del tallo principal 12-16 x 1-2 cm, las de los tallos secundarios 4-12 x 0.8-2 cm, las de los tallos terciarios 3-9 x 0.7-1.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, generalmente de las ramificaciones, sencilla, dística, erecta a arqueada, 3.5-6 cm de largo; pedúnculo muy corto, lateralmente comprimido, recto, 1-2 cm de largo; cubierto parcialmente por 1 bráctea, conduplicada, anchamente oblongo ovada, obtusa, 1.0-1.6 cm de largo; raquis terete, delgado, flexuoso. **Brácteas florales** mucho más largas que el ovario, conduplicadas, no imbricadas, anchamente ovadas, agudas, pardo amarillentas al secar, 1-1.9 x 1.0-1.8 cm. **Flores** 4-6, simultáneas, blanco verdosas, en ocasiones difuminadas parcial o totalmente color marrón, sin datos de fragancia. **Ovario** no ornamentado, terete, cubierto completamente por las brácteas florales, recto, 8-12 mm de largo. **Sépalos** extendidos, libres, glabros, ovado elípticos, agudos, mucronados, 7-8 nervados, margen entero, ligeramente revoluto, 9.5-12 x 4.5-6 mm; los **laterales** oblicuos, fuertemente carinados, la carina erosa. **Pétalos** extendidos, libres, glabros, elípticos, agudos, 5-7 nervados, margen entero, extendido, 10-11 x 4.5-5.5 mm. **Labelo** unido a la columna, entero, oscuramente trilobado al extenderse, subcuadrado, base cordada, emarginado, con un apículo en el seno, abrazando a la columna, margen ligeramente revoluto en posición natural, 7-12 x 9.5-10.5 mm; unicalloso, callo laminar, tridentado; unicarinado, la carina recorre todo el largo de la lámina del labelo. **Columna** recta, corta, 4 mm de largo. **Clinandrio** corto, en forma de embudo, entero. **Antera** subglobosa, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves, granulosas; viscidio semilíquido. **Rostelo** hendido, subapical. **Lóbulos laterales del estigma** pequeños, de 1/3 del largo de la cavidad estigmática. **Nectario** penetrando 1/5 parte de la longitud del ovario, no inflado, liso. **Cápsula** subglobosa, 1.7-2.0 cm de largo, con un cuello apical de 7.5-9 mm de largo.

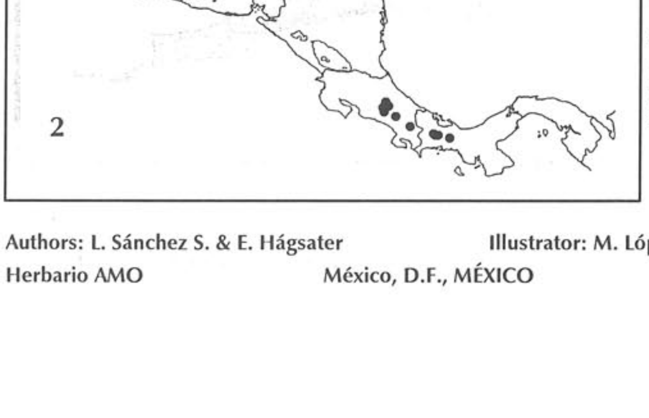
Epiphytic or terrestrial **herb**, essentially monopodial, branching above. **Stems** branched, terete. **Leaves** narrowly elliptic, obliquely bilobed; those of the main stem longer and wider than those of the secondary and tertiary stems. **Inflorescence** apical from the branches, racemose, distichous, erect to arcuate. **Floral bracts** longer than the ovary, conduplicate, widely ovate, acute. **Flowers** 4-6, simultaneous, greenish white, lip tinged with red. **Ovary** straight. **Sepals** ovate-elliptic, acute, mucronate, 7-8 veined; the **laterals** oblique, strongly carinate, keel erose. **Petals** elliptic, acute, 5-7 veined. **Lip** entire, subquadrate, slightly 3-lobed when spread, base cordate; unicallose, callus laminar tridentate; 1-keeled. **Column** straight, short. **Clinandrium-hood** short, entire. **Anther** subglobose, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose; viscidium semiliquid. **Rostellum** slit, subapical. **Lateral stigma lobes** small. **Nectary** slightly penetrating the ovary, smooth. **Capsule** subglobose, with an apical neck.

OTHER SPECIMENS: COSTA RICA: Cartago: N of Quebrada Casa Blanca, Tapantí, 1350 m, 25 XI 1984, *Grayum 4578*, AMO! CR! MO! Tres de Junio, 2200-2400 m, 23 VI 1982, *Todzia 1836*, CR! NY! **Puntarenas-Limón:** Cerro Bekom on the Continental divide, 11 km SSW of the peak of Cerro Kamuk, 2650-2800 m, 28 III 1984, *Davidse 26196*, AMO! CR! MO! **San José:** Chirripó massif, place along trail known as Abra, 2500 m, 2 IV 1969, *Davidse 1525*, AMO! (Illustration.) Finca La Cima N of El Copey, 2100-2400 m, 21 XII 1925, Standley 42577, AMES! US! 3 miles E of El Copey, 7000 ft, 19 IV 1928, *Stork 1605*, AMES! Ibid. 7500 ft, 20 IV 1928, *Stork 1631*, AMES! Carretera Pan Americana, 2600 m, 13 XII 1979, *Todzia 1202*, CR! **PANAMA: Chiriquí:** Fortuna, *Akers s.n.*, AMO! SEL! Cerro Punta, Vicinity of Cerro Punta, 2000 m, 24 V 1946, *Allen 3479*, AMES! Cerro Punta, Slopes of Las Cumbres near Cerro Punta, 20 II 1971, *Croat 13696*, MO! Boquete 10 miles above Boquete on road to Volcan Baru, 2600 m, 18 V 1976, *Croat 34836*, MO! N side of Cerro Pavón on Paseo Respingo, 8400 ft , 4 IV 1979, *D'Arcy 12926*, MO! Boquete, 8500 ft, 15 VII 1938, *Davidson 971*, AMES! F! MO! US! Ridge above Alto Pineda, 9000-10400 ft, 15 IV 1979, *Hammel 7142*, MO!

OTHER RECORDS: COSTA RICA: Cartago: El Guarco, Del Cañon del Guarco, 3150 m, 10 VI 1981, *Hágsater 6384*, flowers in spirit AMO!

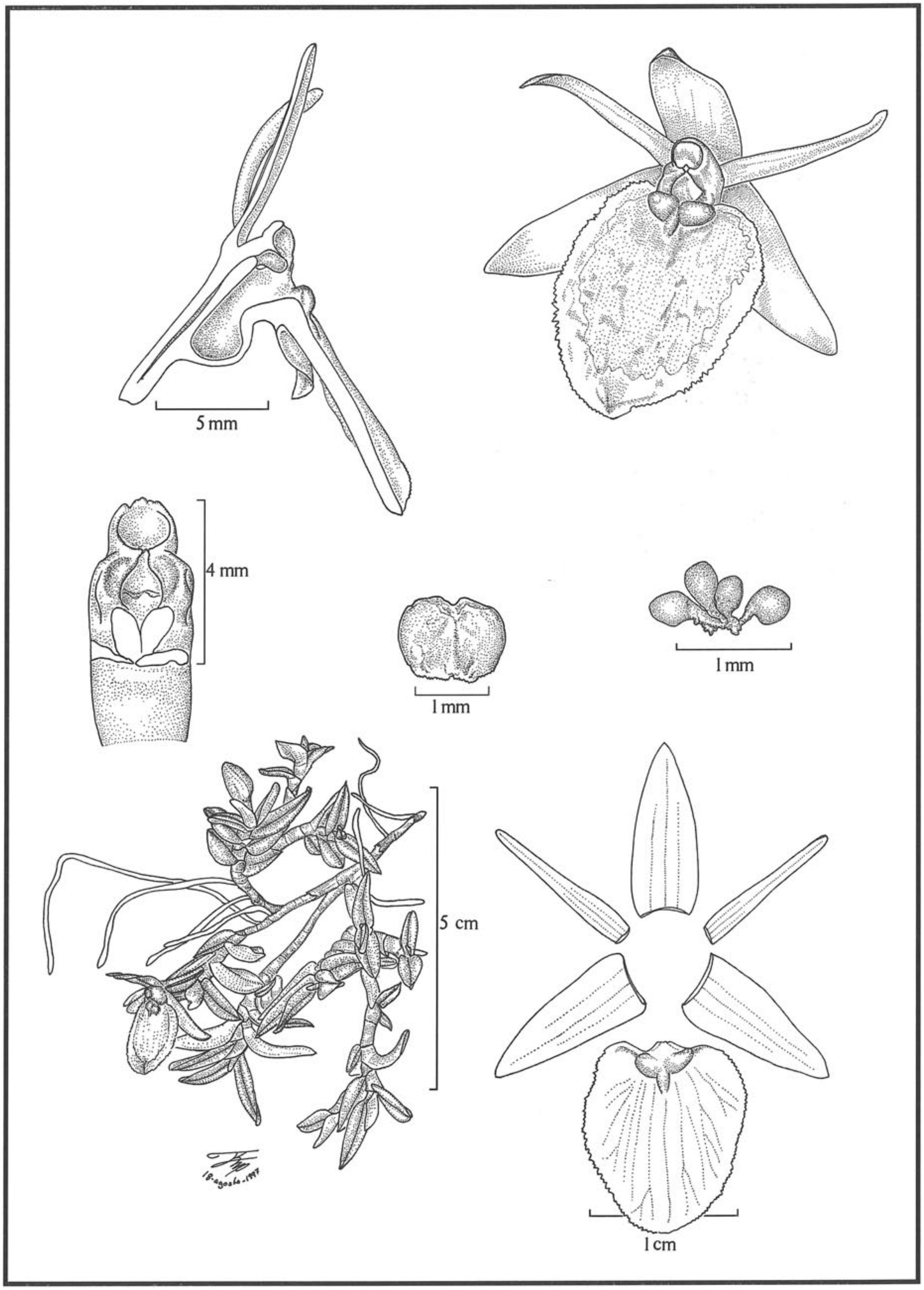
DISTRIBUTION AND ECOLOGY: Known from the Cordillera de Talamanca in eastern Costa Rica and western Panama. Epiphyte or terrestrial, along the Pacific slope, in oak forest and rain forest, from 2100 to 3150 m altitude. Flowering from February to July.

RECOGNITION: *Epidendrum gibbosum* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Platystigma Subgroup which has *Vanda*-like plants when young, before branching occurs, with long, strap-like leaves. The species is recognized by the large plants with narrowly elliptic leaves, secondary and tertiary branches with leaves 3-12 x 0.7-2 cm, the floral bracts 1-1.9 cm long, flowers greenish white, sometimes the lip tinged with red, ovary straight, lateral sepals strongly carinate, keel erose, lip subquadrate, base cordate. It is very similar to *Epidendrum platystigma* Rchb.f. but that species has longer leaves, white flowers, the lateral sepals slightly carinate and the lip subtriangular. *Epidendrum paraguastigma* Hágsater & García-Cruz also has white flowers, an ovate, acute lip, the base truncate. *Epidendrum campbellstigma* Hágsater & García-Cruz has apple green flowers, the lip white, an arcuate ovary, subreniform lip, with the base cordate, clinandrium as long as the column, entire. *Epidendrum penneystigma* Hágsater & García-Cruz has white flowers, and a semicircular-flabellate lip. *Epidendrum jefestigma* Hágsater & García-Cruz, has whitish green flowers, a white, suborbicular lip with the base truncate, and a callus bilobate.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *gibba*, hump, swelling, in reference to the base of the lip, which forms a hump when seen from below.



EPIDENDRUM GNOMUS Schltr. **Plate 1128**

EPIDENDRUM GNOMUS Schltr., Repert. Spec. Nov. Regni. Veg. Beih. 8: 85. 1921.

Type: PERU: Junin: Auf Baumstämmen in lichtem Walde bei La Merced, im Chanchamayo-Tale, 1000 m, Dez. 1902. ***A. Weberbauer 1949***. Holotype: B, presumably destroyed. Lectotype (here designated): illustration published in Repert. Spec, Nov. Regni. Veg. Beih. 57; t. 142, Nr. 558. 1929.

Hierba epífita, rastrera, 2-3 cm de alto. **Raíces** escasas, a lo largo de la mitad basal de cada tallo, carnosas, delgadas, 0.5 mm de grosor. **Tallos** producidos de la mitad del tallo anterior, sencillos, tipo caña, teretes, rectos, 14-28 mm de largo, 1.5-2 mm de grosor. **Hojas** alternas, 7-8, (frecuentemente las inferiores caedizas, quedando el tallo con 4), distribuidas a todo lo largo de la mitad superior del tallo, vaina tubular, lateralmente comprimida, lisa, 2.5-3.5 x 2.5-3.5 mm; lámina foliar articulada, lanceolada, oblicua, ápice cuspidado, márgenes y quilla diminutamente dentadas hacia el ápice, suculenta, lisa, verde oscuro, desiguales, las medias más grandes 9-14 x 4-5 mm. **Inflorescencia** apical, del crecimiento maduro, florece una sola vez, sesil, pedúnculo y ovario totalmente cubiertas por una **espata**, semioblonga (sin extenderse), los lados paralelos, ápice obtuso, conduplicada, de 6-7 x 3 mm. **Flor** solitaria, resupinada, coloración verdosa, con el centro del labelo rojizo, los callos verdes, columna rojiza, antera blanca; fragancia ninguna. **Bráctea floral** muy pequeña, oculta dentro de la espata. **Ovario** inflado, formando una vescícula prominente y globosa, ventral, detrás del perianto, de sección circular en la base, no ornamentado, 8 mm de largo. **Sépalos** extendidos, libres, membranaceos, glabros, márgenes extendidos, ovado triangulares, agudos, 3-nervados; 12 x 4 mm. **Pétalos** extendidos, angostamente lanceolado triangular, ápice obtuso, márgenes extendidos, membranaceos, 3-nervados; 10 x 1.5 mm. **Labelo** unido a la columna, ovado, base algo cordada, ápice redondeado, todo el margen dentado, plano en posición natural, 12 x 11 mm; bicalloso, los callos globosos, algo transversales, con un principio de quilla intermedia apenas asomándose. **Columna** recta, gruesa, 2.5 mm de largo incluyendo el clinandrio, ventralmente engrosada con la uña del labelo para formar un nectario ámplio. **Clinandrio** ligeramente sobrepasando el cuerpo de la columna, entero. **Rostelo** apical, hendido; lóbulos laterales del estigma muy pequeños. **Nectario** amplio, penetrando un poco más de la mitad del pedicelo, liso interiormente. **Antera** reniforme, superficie diminutamente papilosa, 4 locular. **Polinios** 4, ovoideos, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más cortas que los polinios; viscidio semilíquido, transparente. **Cápsula** no vista.

Epiphytic, creeping **herb**. **Roots** scarce, along the basal half of each stem, fleshy, thin. **Stems** produced from the middle of the previous stem, simple, cane-like, terete, straight. **Leaves** alternate, 7-8, (the lower ones often falling off and leaving 4), distributed throughout the apical half of the stem, sheath tubular, laterally compressed, smooth; blade articulate, lanceolate, oblique, apex cuspidate, margins and keel minutely dentate towards the apex, succulent, smooth, dark green, unequal, the middle leaves larger. **Inflorescence** apical, from mature growth, flowering only once, sessile, peduncle and ovary totally covered by a semi-oblong, conduplicate **spathe**, apex obtuse. **Flower** solitary, resupinate, greenish with the center of the lip reddish, callii green, column reddish, anther white; without fragrance. **Floral bract** very small, hidden by spathe. **Ovary** inflated, forming a prominent, globose vesicle behind the perianth; basal section circular, un-ornamented. **Sepals** spreading, free, membranaceous, glabrous, margins extended, ovate-triangular, acute, 3-veined. **Petals** spreading, narrowly lanceolate-triangular, obtuse, membranaceous, margins spreading, 3-veined. **Lip** united to the column, ovate, base somewhat cordate, apex rounded, all margins dentate, flat in natural position; bicallose, callii globose, somewhat transverse with the beginnings of an intermediate keel showing in between. **Column** straight, thick, ventrally thickened with the claw of the lip to form a wide nectary. **Clinandrium** somewhat surpassing the body of the column, entire. **Rostellum** apical, slit, lateral lobes of stigma very small. **Nectary** ample, penetrating little more than the middle of the pedicel, smooth inside. **Anther** reniform, surface minutely papilose, 4-celled. **Pollinia** 4, ovoid, laterally compressed, subequal; caudicles soft and granular, shorter than the pollinia; viscidium semi-liquid, transparent.

OTHER SPECIMENS: PERU: Bongara: Yambrasbamba: Shucayacu, 1600 m, Hort. Colomborquídeas Hort. AMO, col. September 1990 by Manuel Arias, pressed 18 agosto 1997, *Hágsater 11854,* AMO! USM! (Illustration voucher.)

DISTRIBUTION AND ECOLOGY: Apparently restricted to the eastern Andes of Peru, in the Departments of Amazonas and Junin, at about 1000-1600 m altitude. Flowering in December (in August in cultivation in Mexico).

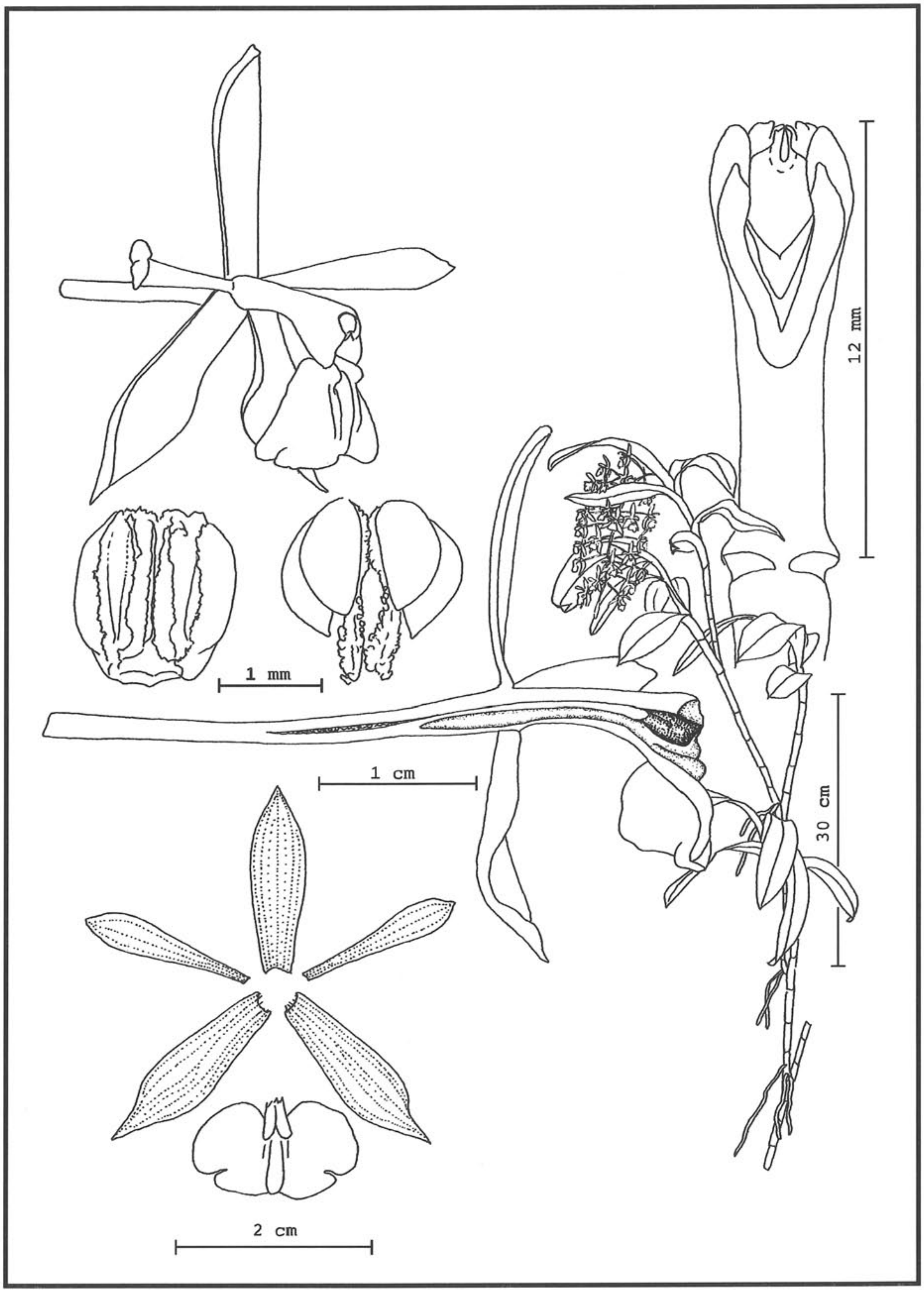


RECOGNITION: *Epidendrum gnomus* is closely related to *E. viridibrunneum* Rchb.f. of the porpax group, from which it is recognized by the globose, divergent callii, the cordate base of the lip and the globose vesicle on the underside of the ovary. Both species have dentate margins of the lip. In *Epidendrum maxthompsonianum* Hágsater & Dalström the column is oblique, the petals are oblong, relatively wide, forming a cucullate hood with the dorsal sepal over the column, in natural position, the lip is orbicular. *Epidendrum mathewsii* Rchb.f. which also grows in the region has larger plants but similar sized flowers, with the lip reniform, convex, 3-keeled with entire margins, and the nectary is elongate and does not form a globose vesicle on the underside of the ovary. By comparison, the plants of *E. gnomus* look like small specimens of *E. mathewsii.* This group has of species has generally by relegated to synonymy of *E. porpax* Rchb.f. or *E. peperomia* Rchb.f.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to a gnome, a dwarf, reminding the very small size of the plants.

Author: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM GREENWOODII Hágsater

Plate 1129

EPIDENDRUM GREENWOODII Hágsater, Orquídea (Mexico City) 10(2): 338. 1987.

Type: MEXICO: Oaxaca: Carretera Oaxaca-Puerto Escondido km 180, 2050 m, col. 23 January 1976, ***E. W. Greenwood sub Hágsater 4308.*** Prepared from cultivated material, 29 April 1981, Holotype: AMO! (Illustration voucher) Isotypes: AMES! K! MEXU! SEL! US!, Clonotypes: 30 March 1983, MO! 23 April 1979, BR! 15 March 1982, AMO! ENCB! UVAL! W! 22 March 1984, XAL! 3 April 1984, SEL! 10 March 1985, (flowers in spirit) AMO! 25 March 1985, AMO x2! MICH! 1 April 1986, AMO! US! XAL! 1 December 1986, MO!

Hierba epífita o litófita, simpodial, erecta, donde cada tallo nuevo se origina de un entrenudo intermedio del tallo anterior, de 70-160 cm de alto. **Raíces** producidas en la base de los tallos, tanto inferiores como superiores, carnosas, gruesas, 4.0-7.0 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, 12-45 x 0.3-1.3 cm. **Hojas** 3-6, agrupadas hacia el ápice del tallo, alternas, articuladas; vainas tubulares, lisas, 1.0-5.0 x 0.3-1.3 cm; lámina angostamente elíptica, aguda, margen entero, subcoriacea, lisa, verde, 4.0-18 x 1.5-3.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueada, 7.0-20 cm de largo; pedúnculo lateralmente comprimido en la base, arqueado, desprovisto de brácteas, 1.5 cm de largo. **Brácteas florales** de un poco menos de la mitad del largo del ovario, triangulares, acuminadas, abrazadoras, gradualmente más cortas, 9.0-22 mm de largo. **Flores** 12-32, simultáneas, resupinadas, sépalos y pétalos anaranjado ocres, labelo blanco con los lóbulos apicales anaranjado ocres, en ocasiones el color anaranjado ocre cubre casi todo el labelo, callos amarillos, columna blanca, antera ligeramente amoratada, fragancia débil, dulce, metálica, nocturna. **Ovario** terete, delgado, no inflado, no ornamentado, 21-40 mm de largo. **Sépalos** extendidos, libres, angostamente obovados, agudos, 6-7-nervados, margen extendido, entero, glabros, membranáceos, [13]17-21 x 4.0-7.0 mm; los **laterales** con una quilla dorsal conspicua. **Pétalos** extendidos, libres, angostamente oblanceolados, ápice agudo, 3-nervados, margen extendido, entero, membranáceos, [13]16-17 x 3.0-4.0 mm. **Labelo** unido a la columna, trilobado, cordado en la base, margen entero, carnoso, convexo, 6.0-10 x 10-16 mm; bicalloso, los callos delgados, cortos; disco con una carina intercallosa, roma y dos laterales muy cortas; lóbulos laterales suborbiculares, 6.6 x 7.4 mm; lóbulo medio muy corto, bilobado, el seno apical emarginado, 2.2 x 12.5 mm. **Columna** recta, delgada en la base, gradualmente más ancha en el ápice, 12-13 mm de largo. **Clinandrio** corto, margen entero. **Antera** ovada, con una quilla roma al frente, 4 locular. **Polinios** 4, semiovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas ligeramente más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** obsoletos. **Nectario** poco profundo, penetrando menos de una cuarta parte del ovario, no inflado, liso. **Cápsula** no vista.

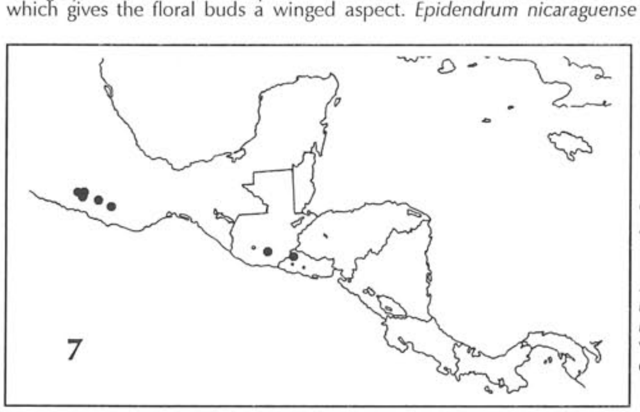
Epiphytic or lithophytic, sympodial, erect, **herb** where the new stem arises from a middle internode of the previous stem. **Roots** from the base of the stems, fleshy, thick. **Stems** simple, cane-like, terete, straight. **Leaves** 3-6, aggregate towards the apex of the stem, alternate, articulate; sheaths tubular, smooth; blade narrowly elliptic, acute, subcoriaceous, smooth, green, margin entire. **Inflorescence** apical, flowering only once, racemose, arching; peduncle laterally compressed at the base, arching, without bracts. **Floral bracts** somewhat less than half the length of the ovary, triangular, acuminate. **Flowers** 12-32, simultaneous, resupinate, sepals and petals ochre-orange, lip white, apical lobes ochre-orange, the color sometimes covering nearly the whole lip; calli yellow, column white, anther slightly purple; fragrance weak, sweet, metallic, nocturnal. **Ovary** terete, thin, not inflated, smooth. **Sepals** spreading, free, narrowly obovate, acute, 6-7-veined, glabrous, membranaceous, margin entire, spreading; lateral sepals with a conspicuous dorsal keel. **Petals** spreading, free, narrowly oblanceolate, apex acute, 3-veined, membranaceous, margin spreading, entire. **Lip** united to the column,3-lobed, base cordate, fleshy, convex, margin entire; bicallose, the calli thin, short; disc with a keel in the middle, rounded, with a pair of short lateral keels; lateral lobes suborbicular; midlobe very short, bilobed, with an apical emarginate sinus. **Column** straight, thin at the base, gradually wider towards the apex. **Clinandrium-hood** short, margin entire. **Anther** ovate, with a rounded keel in front, 4-celled. **Pollinia** 4, semiovoid, laterally compressed, subequal; caudicles soft and granulose, slightly longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** shallow, penetrasting less than ¼ of the ovary, not inflated, smooth.

OTHER SPECIMENS: MEXICO: Oaxaca: Pto. Escondido road, 2050 m, 23 I 1976, *Greenwood s.n.,* AMO x4! San Andres Chicahuaxtla, Cerro Zarzamoras, 8000 ft, 11 V 1961, *MacDougall s.n.,* AMO! Km 187, highway 131, San Juan Lachao, ca. 6000 ft., 22 II 1974, *Pollard R-45,* AMO! Puerto Escondido road, Cerro del Vidrio, 1900-2000 m, 17 XI 1987, *Soto 4131,* AMO x3! **EL SALVADOR: San Salvador:** Cerro El Pital, 2500 m, 3 I 1978, *Hamer 660,* AMO! SEL! Ibid. 9 II 1978, *Hamer 709,* AMO!

OTHER RECORDS: MEXICO: Oaxaca: Pto. Escondido road, 2050 m, 17 III 1976, *Greenwood s.n.,* note, AMO! Ibid. 1830 m, 20 III 1976, *Greenwood s.n.,* note and slide, AMO! Oaxaca-Puerto Escondido road, 1780 m, 23 II 1974, *Greenwood R-45,* slide, AMO! Pto. Escondido road, 18 II 1976, *McCullough 1874,* flower card and slide, AMO! Ibid. *1875,* flower card and slide, AMO! Without locality, Ibid. *1890,* slide, AMO! Putla-Pinotepa highway, 9 I 1963, *Pollard R-23,* photographs and flower card, Pollard Notes, AMO! Without locality, IX 1975, *Scheeren s.n.,* slide, AMO! Puerto Escondido road, Cerro del Vidrio, 1900-2000 m, 17 XI 1987, *Soto 4131,* slide, AMO! **GUATEMALA: Sololá:** Volcán Atitlán, 2360 m, XI 1980, *Dix 4931,* in spirit, AMO! **EL SALVADOR: San Salvador:** Cerro El Pital, 2500 m, *Hamer 660,* illustration and photo, AMO!

DISTRIBUTION AND ECOLOGY: Restricted to the Pacific range of the Sierra Madre del Sur from Mexico (Oaxaca) to El Salvador. Grows in oak and pine-oak forests often in cloudy conditions, 1780-2500 m altitude. Flowering from September to May.

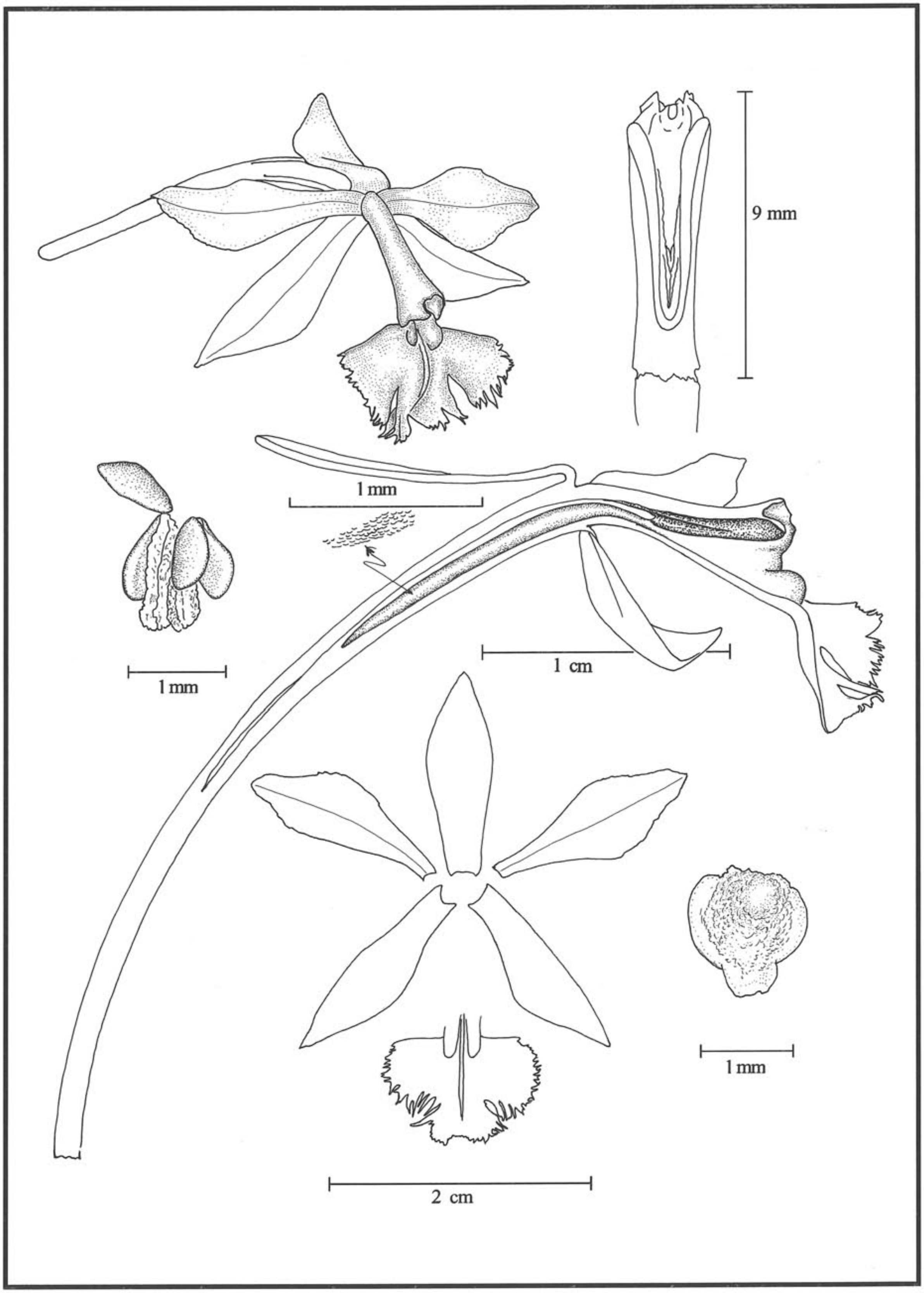
RECOGNITION: *Epidendrum greenwoodii* belongs to the Arbuscula Group, Arbuscula Subgroup which is characterized by the successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, arching, apical inflorescence with colorful flowers, the lip bicallose. The species has robust plants, a long inflorescence, orange-ochre flowers with the column and lip white towards the base, the apical lobes are short, and the flowers have a weak nocturnal fragrance. *Epidendrum camposii* Hágsater also has a long, dense inflorescence with pink to rosy white flowers which turn yellowish, the lip white and the lip 3-lobed. It is somewhat similar to *E. alabastrialatum* Pollard ex Hágsater which has greenish yellow flowers with a white lip and column, the calli orange-yellow, the 4-lobed lip with the four suborbicular lobes about equal in size, and the lateral sepals with a prominent dorsal keel which gives the floral buds a winged aspect. *Epidendrum nicaraguense* Scheeren ex Hágsater is morphologically very similar, but the flowers are somewhat smaller (sepals 14-17 mm long), sepals and petals are pale pink and turn orange-yellow with time, the calli yellow and the lip white, the inflorescence is generally fewer flowered (8-18 flowers). *Epidendrum radioferens* (Ames, Hubbard & C. Schweinf.) Hágsater has magenta-red to burgundy-red flowers with the disc of the lip yellow, the lip entire to 3-lobed (the midlobe short) with 3 central keels and numerous radiating, fleshy thickened veins.



CONSERVATION STATUS: DD. Data deficient. The species is apparently rare with colonies of few individuals.

ETYMOLOGY: In honor of Ed Warren Greenwood (1918-2002), Canadian Chemical Engineer who retired with his wife Mary in Oaxaca where he studied the orchid flora of southern Mexico, and collaborated closely with Glenn E. Pollard and later with Eric Hágsater and collaborators at the AMO Herbarium. He collected the type.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM HAWKESII A.H.Heller

Plate 1130

EPIDENDRUM HAWKESII A.H.Heller, Phytologia 14(1): 23. 1966.

Type: NICARAGUA: Zelaya [Atlántico Sur]: Rama Highway, beyond Río Mico bridge, ca. 200 m, 30 March 1966, ***Alfonse Henry Heller and Alex D. Hawkes 8344***. Holotype: F!

Hierba epífita o terrestre, mirmecófila, simpodial, cespitosa, de 100 cm de alto. **Raíces** basales, delgadas, blancas. **Tallos** sencillos, tipo caña, teretes, delgados, erectos, rectos, 100 x 0.5-0.7 cm de grosor. **Hojas** 7-16, distribuidas en la mitad apical del tallo, dísticas, articuladas; vaina tubular, finamente estriada, usualmente teñidas de púrpura 1.5-4.0 x 0.5-0.7 cm; lámina elíptica, ápice redondeado, bilobado, coriácea, algo teñidas de púrpura especialmente en la superficie dorsal, margen entero, extendido, 3.7-11 x 2.6-4.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, elongada, recta, racemosa, (produciendo un racimo adicional cerca del ápice del pedúnculo cuando el racimo inicial ha dejado de florecer), plauciflora, 54-56 cm de largo; pedúnculo (de la inflorescencia inicial) alargado, terete, erecto, recto, teñido de vino purpúreo, hasta 37-50 cm de largo; cubierto casi en su totalidad por 7 brácteas tubulares, agudas, finamente estriadas, escariosas, 3.0-6.0 cm de largo; el pedúnculo del racimo adicional, algo más corto, 13 cm de largo; con 3 brácteas tubulares, agudas, cortas, escariosas, 8-15 mm de largo; raquis corto, terete, delgado, recto, 2-6 cm de largo. **Flores** 6-30, simultáneas, resupinadas, color naranja rojizo, la parte distal de la columna, los callos y la quilla de color amarillo; sin datos de fragancia. **Brácteas florales** mucho más cortas que el ovario, triangular ovadas, agudas a acuminadas, abrazadoras, 2-6 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, ligeramente arqueado y rojizo, 35-50 mm de largo. **Sépalos** libres, oblanceolados, agudos, 5-nervados, margen entero, extendido, 12-16 x 3.5-4.5 mm; el **dorsal** reflexo; los **laterales** extendidos, oblicuos. **Pétalos** ligeramente reflexos, libres, angostamente rómbicos, unguiculados en la base y agudos en el ápice, 7-nervados, margen diminutamente eroso-dentado en la mitad apical, extendido, 12-15 x 4.0-5.5 mm. **Labelo** unido a la columna, trilobado, base truncada, margen dentado, 8-9 x 9-12 mm; bicalloso, los callos prominentes, laminares, paralelos; disco provisto de una quilla intercallosa, laminar, delgada, sigmoide, que se desvanece antes de llegar al seno apical; lóbulos laterales dolabriformes, 7.0 x 4.0 mm; lóbulo medio con un istmo corto en la base, el ápice flabelado, diminutamente apiculado, 4.0 x 6.0 mm. **Columna** delgada, recta, la mitad apical ligeramente dirigida hacia arriba, el ápice con un par de dientes redondeados justo debajo de la antera, 10 mm de largo. **Clinandrio** corto, entero, margen dentado. **Antera** ovoide, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas como un grupo de tejas, ligeramente más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando 1/3 del ovario, delgado, no inflado, liso, diminutamente papiloso. **Cápsula** globosa a elipsoide, con tres quillas longitudinales prominentes; cuerpo 32-40 x 15-25 mm; pedicelo 12-25 mm de largo; cuello apical 12-20 mm de largo.

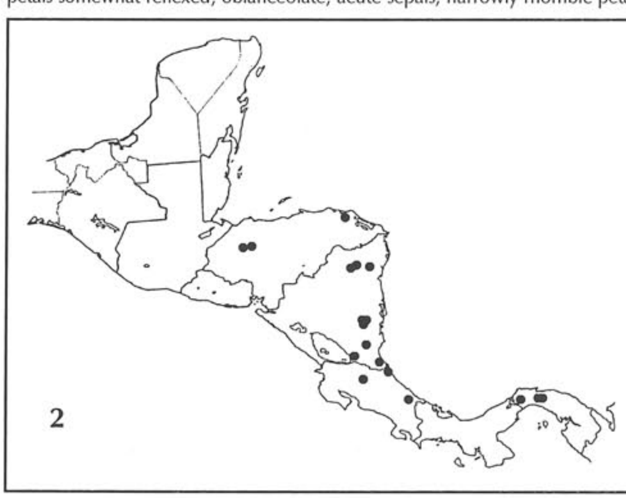
Epiphytic or terrestrial, myrmecophilous, sympodial, caespitose **herb. Roots** basal, thin, white. **Stems** simple, cane-like, terete, thin, erect, straight, tall. **Leaves** 7-16, distributed along the apical half of the stem, distichous, articulate; sheath tubular, minutely striated, usually tinged purple; blade elliptic, apex rounded, bilobed, coriaceous, somewhat tinged purple, especially dorsally, margin entire, spreading. **Inflorescence** apical, elongate, straight, racemose (producing additional racemes near the apex of the peduncle when the initial raceme has finished flowering), many-flowered; peduncle (of the initial raceme) elongate, terete, erect, straight, tinged wine-purple, nearly totally covered by 7 tubular, acute, minutely striated, scarious bracts; the peduncle of the additional raceme short, with 3 tubular, acute, short, scarious bracts; rachis short, terete, thin straight. **Flowers** 6-30, simultaneous, resupinate, reddish orange, the distal part of the column, calli and keel yellow. **Floral bracts** much shorter than the ovary, triangular-ovate, acute to acuminate. **Ovary** terete, thin, not inflated, smooth, slightly arching, reddish. **Sepals** free, oblanceolate, acute, 5-veined, margin entire, spreading; the dorsal sepals reflexed, the lateral sepals spreading, oblique. **Petals** slightly reflexed, free, narrowly rhombic, unguiculate at the base, apex acute, 7-veined, apical half of the margin minutely erose-dentate, spreading. **Lip** united to the column, 3-lobed, base truncate, margin dentate; bicallose, the calli prominent, laminar, parallel; disc provided with a middle laminar, thin, sigmoid keel, which disappears before reaching the apical sinus; lateral lobes dolabriform; midlobe with a short basal isthmus, the apex flabellate, minutely apiculate. **Column** thin, straight, the apical half slightly upturned, the apex with a pair of rounded teeth below the anther. **Clinandrium-hood** short, entire, margin dentate. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles like a pile of roof-tiles, slightly longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, thin, not inflated, minutely papillose. **Capsule** globose to elliptic, with 3 prominent longitudinal keels, pedicel thin, apical neck thin.

OTHER SPECIMENS: HONDURAS: Cortés: El Jaral, Lake Yojoa, 2000 ft, 15 III 1933, *Edwards 376*, AMES x2! K! Santa Cruz de Yojoa, 2000 ft, 6 XII 1933, *Edwards 626*, AMES x2! **Gracias a Dios:** Tributary stream of Río Platano behind village of Ras, 0 m, 23 V 1973, *Gentry 7564*, AMO! MO! **NICARAGUA:** Without locality data, VI 1868, *Tate 471*, BM! K! **Zelaya [Atlántico Norte]:** 5 miles W of Bonanza, 7 I 1974, *Atwood 7000*, MO! Along Río Sucio, ca. 0.5 km E of first suspension bridge E of Bonanza, ca. 140 m, 24 IV 1978, *Stevens 8075*, MO! SEL! La Rosita, ca. 12 km NE of Mina Rosita, ca. 55 m, 20 III 1979, *Pipoly 5000*, MO! SEL! **Atlántico Sur:** 3.6 km SE Cerro San Isidro Río Kama, Río Escondido, 0-65 m, 25 III 1966, *Proctor 27240*, NY! Río Punta Gorda, al este de la corriente Guitarrona, 24 II 1994, *Rueda 3503*, MO! Río Chiquito, Cano Dos Oros, a 5-7 km al N de Atlanta, 12 XI 1981, *Téllez 4953*, MEXU! **Río San Juan:** San Juan del Norte, Río Indio. Caño La Paloma, 5 m, 1 XII 1982, *Araquistain 3346*, MO! **COSTA RICA: Alajuela:** Llanuras de San Carlos, cerca de Cantarana, 65-80 m, 6 IV 1984, *Horich sub Hágsater 7649*, AMO! (Illustration voucher) Los Chiles, Río Frío, 30-40 m, 1 VIII 1949, *Holm 718*, MO! **Limón:** Between Barra del Colorado and the mouth of Río San Juan, 5 m, 21 IX 1986, *Davidse 31488*, MO! Reserva Biológica Hitoy Cerere, 300 m, 25 II 1989, *Herrera 2456*, INB! **PANAMA: Comarca de San Blas:** El Llano-Carti road, ca. 400 m, 16 I 1974, *Nee 9383*, MO! El Llano-Cartí, 350 m, 13 II 1985, *Nevers 4867*, MO! El Llano, Carti Road, 900-1000 m, 21 I 1981, *Sytsma 3107*, MO! **Panamá:** below mouth of Quebrada Ancha, 18 XII 1934, *Dodge 17042*, MO!

OTHER RECORDS: COSTA RICA: Alajuela: Llanuras de San Carlos, cerca de Cantarana, 65-80 m, 6 IV 1984, *Horich sub Hágsater 7649*, flower card, spirit and slide, AMO! Río Blanco, 1.5 km S of road to Limón; Atlantic lowland, on Guayaba, ca. 100 m, V 2001, *Hall s.n.*, color photo, AMO!

DISTRIBUTION AND ECOLOGY: Epiphytic, growing from sea level to 1000 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum hawkesii* belongs to the Schistochilum Group, Calanthum subgroup and Flexuosum complex, characterized by the caespitose habit, numerous oblong, coriaceous leaves, usually elongate peduncle of the inflorescence with a raceme of non-resupinate flowers, bicallose lip and caudicles of the pollinia, like a pile of roof-tiles. The species is recognized by the resupinate, reddish orange colored flowers, the petals somewhat reflexed, oblanceolate, acute sepals, narrowly rhombic petals with the base unguiculate and the apical margin erose. *Epidendrum baumannianum* Schltr. is vegetatively very similar, but the lateral sepals are oblong, oblique and acuminate, very similar to the petals, and the petals have an entire margin. *Epidendrum apatotylosum* Hágsater has non-resupinate, purplish-red flowers with the distal part of the column white, prolonged by a pair of truncate, laminar appendices that appear as part of the calli. *Epidendrum radicans* Pavón ex Lindl. has a creeping habit, with roots all along the stem, orange-reddish flowers, the disc of the lip yellow with a few red dots, sepals and petals are generally spreading, elliptic and acute, the margin entire.



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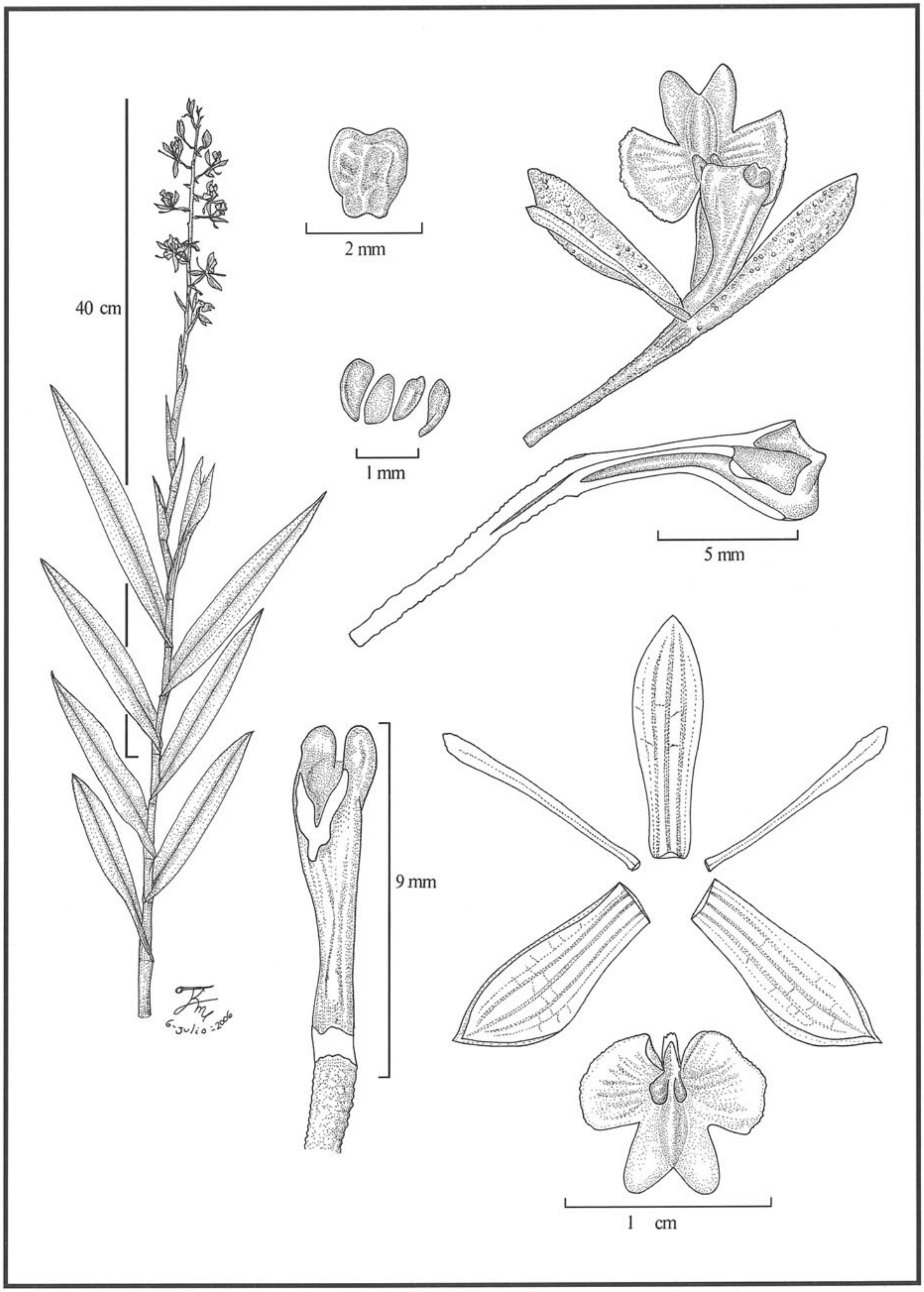
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Alex Drum Hawkes, (1927-1977) avid orchid student of Oakes Ames, wrote numerous articles on orchids, published The Orchid Journal (1952-1959). Numerous orchid species were published by him, and other dedicated to him.

REFERENCES: Atwood J. T. 1987. *The Vascular Flora of La Selva Biological Station, Costa Rica. Orchidaceae*, **Selbyana** 10(1): 86, fig. 24; Hamer, F. 1982. *Epidendrum hawkesii* in C.H. Dodson, **Icon. Pl. Trop.** 8: pl. 717.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

Herbario AMO México, D.F., MÉXICO



EPIDENDRUM HONDURENSE Ames

Plate 1131

EPIDENDRUM HONDURENSE Ames, Bot. Mus. Leafl. 1(7): 1. 1933.

Type: HONDURAS: [Cortés: La Fragua, cited as], near the Ulúa River [near Tela, Depto. Atlántida], [20 III 1923, cited as] 20 III 1930, ***Oakes Ames s.n.*** Holotype: AMES 33710! Illustration, xerox K!

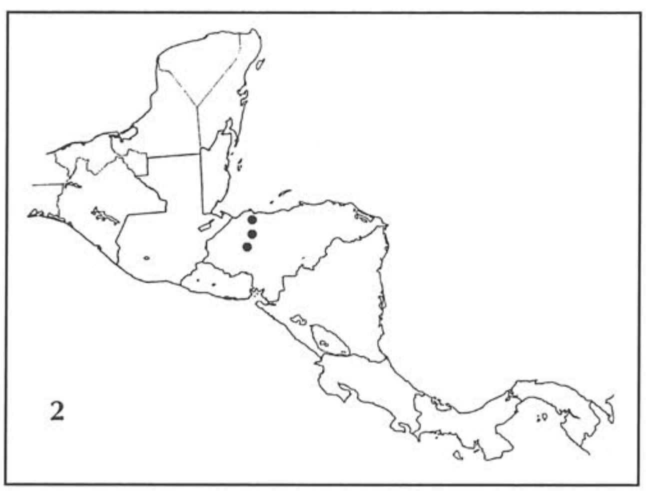
Hierba epífita o litófita, simpodial, cespitosa, 80-120 cm de alto. **Raíces** basales, carnosas, 2-4 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y algo lateralmente aplanados hacia el ápice, delgados, rectos, 50-90 x 0.2-0.6 cm. **Hojas** 7-17, distribuidas a lo largo del tallo, alternas, articuladas, ascendentes, desiguales en tamaño; vainas tubulares, lisas, escariosas y fibrosas con el tiempo, 2-4 x 0.2-0.6 cm; lámina oblongo elíptica, aguda a cortamente acuminada, subcoriácea, cartácea cuando seca, margen entero, [6-10]15-21.5 x 1.5-3.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, erecta, pluriflora, laxa, 20-30 cm de largo; pedúnculo delgado, lateralmente aplanado, alargado, ligeramente sinuoso en la mitad basal y recto en la mitad apical, 8-20.6 cm de largo, provisto de 4-6 brácteas, conduplicadas, ancipitosas, acuminadas, 3-6 cm de largo; raquis delgado, recto, 11-15 cm de largo. **Brácteas florales** de tamaño variable, desde algo más largas que el ovario hasta mucho más cortas, triangulares, agudas, abrazadoras, 2-19 mm de largo. **Ovario** terete, delgado, no inflado, pustulado, 10-12 mm de largo. **Flores** 16-22, simultáneas, resupinadas, de color verdoso a amarillo pálido, labelo cremoso; sin datos de fragancia. **Sépalos** extendidos, libres, carnosos, obovado oblanceolados, subagudos, ligeramente cóncavos, dorsalmente algo verrugosos, 5-nervados, margen entero, 9.3-12 x 3-4.4 mm; los **laterales** algo oblicuos. **Pétalos** extendidos, libres, linear oblanceolados, redondeados, 1-nervados, margen entero, extendido, 9-11 x ca. 1-1.2 mm (en su parte más ancha). **Labelo** unido a la columna, 3-lobado, ligeramente convexo, cordado en la base, margen extendido, 5.2-6.5 x 7-10 mm; bicalloso, los callos subglobosos; disco provisto de 3 quillas paralelas, carnosas, delgadas, redondeadas, la central alargada hasta el seno apical de la lámina; lóbulos laterales dolabriformes, margen irregular, 3-4 x 4.5-5 mm; lóbulo medio subcuadrado en forma general, profundamente bilobado, los lóbulos paralelos, triangulares, redondeados, margen entero, 3.5-3.7 x 4-5 mm. **Columna** delgada, recta, el ápice con un par de dietes laterales, pequeños, triangulares, 7-9 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoide, 4-locular. **Polinios** 4, tipo "ala de pájaro", fuertemente comprimidos lateralmente, similares en tamaño. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de ½ del largo de la cavidad estigmática. **Nectario** corto, sin penetrar el ovario, no inflado, liso. **Cápsula** no vista.

Epiphytic or lithophytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete at the base, somewhat laterally compressed towards the apex, thin, straight. **Leaves** 7-17, distributed throughout the stem, alternate, articulate, ascending, unequal in size; sheaths tubular, smooth, becoming scarious and fibrous with time; blade oblong-elliptic, acute to short acuminate, subcoriaceous, carthaceous when dry, margin entire. **Inflorescence** apical, racemose, erect, many-flowered, lax, long; peduncle thin, laterally compressed, elongate, slightly sinuous along the basal half and straight along the apical half, provided with 4-6 conduplicate, ancipitose, acuminate, long bracts; rachis thin, straight. **Floral bracts** variable in size, much longer to much shorter than the ovary, triangular, acute. **Ovary** terete, thin, not inflated, postulate, short. **Flowers** 16-22, simultaneous, resupinate, greenish to pale yellow, the lip cream colored. **Sepals** spreading, free, fleshy, obovate-oblanceolate, subacute, slightly concave, dorsally somewhat verrucose, 5-veined, margin entire; the lateral sepals somewhat oblique. **Petals** spreading, free, linear-oblanceolate, rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, slightly convex, base cordate, margin spreading; bicallose, the calli subglobose; disc provided with 3, parallel, fleshy, thin, rounded keels, the mid keel reaching the apical sinus of the blade; lateral lobes dolabriform, margin irregular; midlobe subquadrate in outline, deeply bilobed, the lobes parallel, triangular, rounded, margin entire. **Column** thin, straight, with a pair of lateral, triangular, rounded teeth at the apex. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, bird-wing type, strongly laterally compressed, similar in size. **Rostellum** apical, slit. **Nectary** short, without penetrating the ovary, not inflated, smooth.

OTHER SPECIMENS: HONDURAS: Comayagua: Lake Yojoa, 2000 ft, 13 VIII 1932, *Edwards 228*, AMES! (Illustration voucher) **Yoro:** Río Pelo, near Progreso, 8 III 1923, *Ames s.n.*, AMES!

DISTRIBUTION AND ECOLOGY: Endemic to the basin of the Ulúa River in northwestern Honduras, epiphyte, up to 600 m altitude. Flowering from March to August.

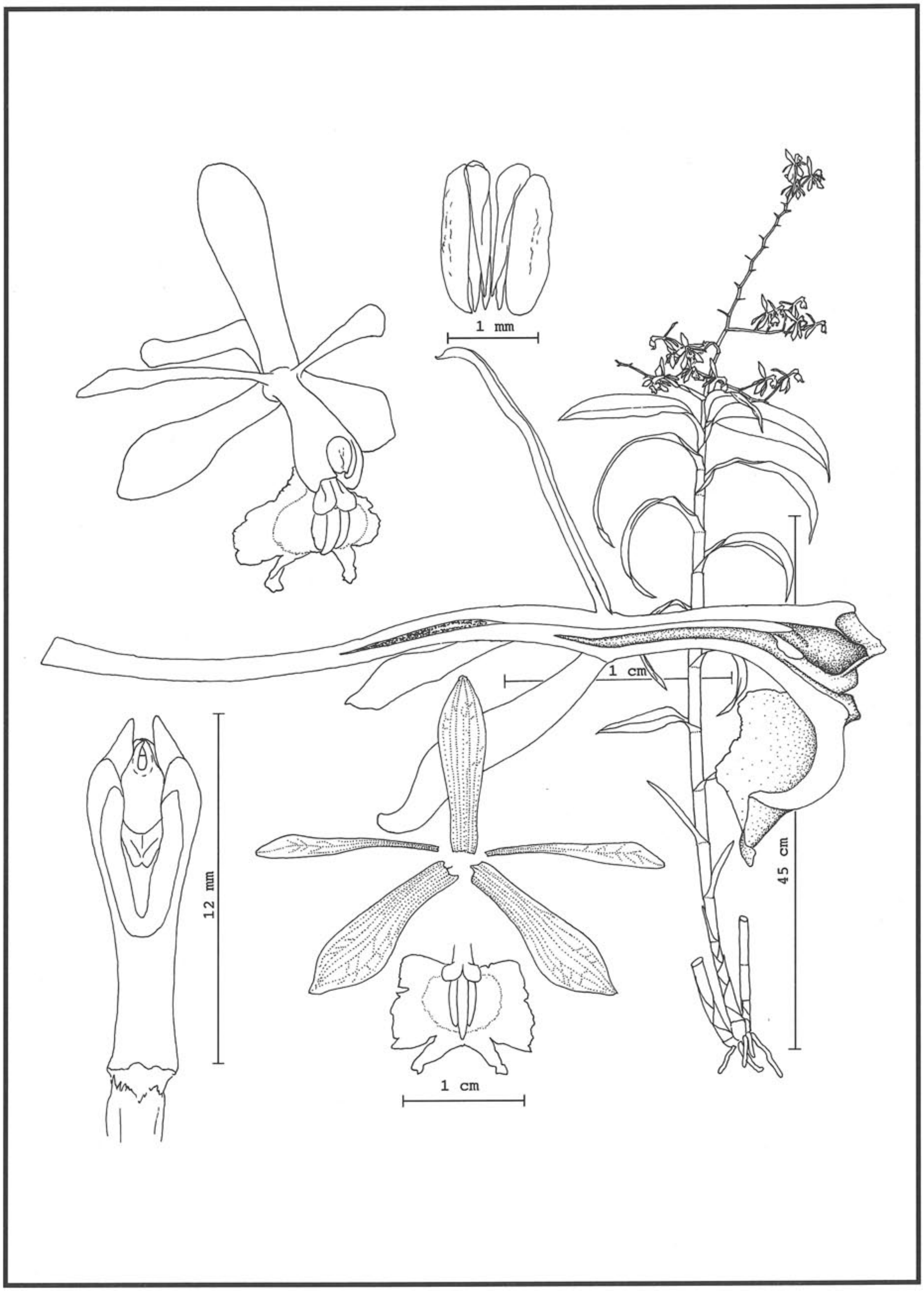
RECOGNITION: *Epidendrum hondurense* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, and Turialvae Subgroup which has a racemose and few-flowered inflorescence on an elongate peduncle, usually producing new racemes over the years and thus pluriracemose. The species is recognized by the oblong-elliptic, acute to short acuminate leaves, 6-21.5 x 1.5-3.5 cm, the inflorescence racemose, the peduncle provided with 4-6, acuminate, long bracts, sepals and petals spreading, green to creamy-yellow, the 3-lobed lip with the midlobe deeply bilobed and forming a pair of non-divaricate, triangular lobes. *Epidendrum turialvae* Rchb.f. has linear-lanceolate leaves up to 18.5 cm long, a subcorymbose, pluriracemose inflorescence, sepals and petals strongly reflexed, greenish brown, the 3-lobed lip translucent, occasionally with a purple blotch over the disc, and the bilobed midlobe with strongly divaricate lobes. *Epidendrum resectum* Rchb.f. has small plants (to 47 cm tall), with a compact racemose inflorescence 5-11 cm long, sepals and petals strongly reflexed, greenish white tinged with pink, the 3-lobed lip with the midlobe forming a pair of oblong, divaricate lobes.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the Republic of Honduras where the type was collected.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM ISTHMII Schltr.

Plate 1132

EPIDENDRUM ISTHMII Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17: 34.1922.

Type: PANAMA: Panama-City, seal level, ***C. W. Powell 104.*** Holotype: B, destroyed. Lectotype: [designated by Christenson, Lindleyana 6(3): 127. 1991.] AMES 23956! Isolectotypes: AMES 23957! K! Additional Isotype: K! Tracing of illustration prepared from the holotype: AMES 26750!

Hierba epífita, simpodial, cespitosa, 50-120 cm de alto. **Raíces** basales, carnosas. **Tallos** sencillos, tipo caña, teretes, muy ligeramente engrosados en la mitad basal, erectos, rectos, 30-80 x 0.9-1.2 cm; cubiertos en la base por vainas tubulares, no foliáceas, escariosas, hasta 50 mm de largo. **Hojas** 9-15, distribuidas a lo largo del tallo, articuladas, alternas, subcoriáceas; vainas tubulares, finamente estriadas, 20-30 x 9-12 mm; lamina lanceolada a elíptico lanceolada, aguda, margen entero, 5.5-13 x 1.3-3.4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, paniculada, suberecta a ligeramente arqueada, pluriflora, laxa, 15-40 cm de largo; pedúnculo delgado, algo lateralmente aplanado, recto, 2-3 cm de largo; desprovisto de brácteas; las brácteas de las ramificaciones, triangulares, acuminadas, abrazadoras, 1.7-4 cm de largo. **Brácteas florales** de tamaño variable, desde muy cortas hasta casi tan largas como el ovario, angostamente triangulares, acuminadas, abrazadoras, 4-22 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 20 mm de largo. **Flores** 10-50, simultáneas, resupinadas, sépalos, pétalos y mitad basal de la columna verdes, la mitad apical de la columna y del labelo blanco cremoso, disco inmaculado, el borde del labelo frecuentemente verdoso; fragancia vespertina a pelo mojado (*Hágsater 8267*). **Sépalos** generalmente extendidos, libres, carnosos, angostamente espatulado oblanceolados, con la mitad apical algo cóncava, diminutamente apiculados, 5-nervados, margen entero, extendido, 13-15.5 x 4-4.5 mm; el **dorsal** redondeado, los **laterales** subagudos, oblicuos. **Pétalos** extendidos a ligeramente reflexos, libres, linear oblanceolados, obtusos, 3-nervados, margen entero, extendido, 13-15 x 2 mm (ancho cerca del ápice). **Labelo** unido a la columna, trilobado, cordado en la base, fuertemente convexo, 9.5 x 12 mm; bicalloso, los callos prominentes, delgados, algo divaricados; disco con 3 quillas muy carnosas, subagudas, la central alargada casi hasta el seno apical de la lámina, el par lateral más corto; lóbulos laterales subrectangulares a dolabriformes, margen ondulado, 4.6 x 8 mm; lóbulo medio bilobado, los lóbulos oblongos, algo divergentes, truncados en el ápice, margen irregular, 3 x 6-7 mm. **Columna** recta, delgada, 10-12 mm de largo. **Clinandrio** reducido, margen entero. **Antera** subesférica, 4-locular. **Polinios** 4, tipo ala de pájaro, fuertemente comprimidos lateralmente, el par interior ligeramente más corto. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ca. de ½ del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando ligeramente el ovario justo detrás del perianto, no inflado, liso. **Cápsula** no vista.

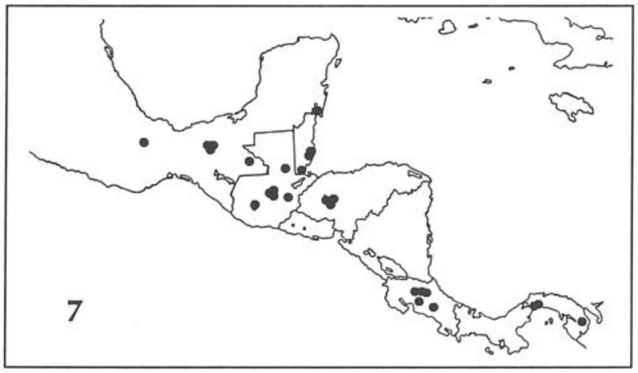
Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy. **Stems** simple, cane-like, terete, very slightly thickened along the basal half, erect, straight; base covered by tubular, scarious, non-foliaceous sheaths. **Leaves** 9-15, distributed throughout the stems, articulate, alternate, subcoriaceous; sheaths tubular, minutely striated; blade lanceolate to elliptic-lanceolate, acute, margin entire. **Inflorescence** apical, flowering only once, paniculate, suberect to slightly arching, lax-many-flowered; peduncle thin, somewhat laterally compressed, straight, without bracts; bracts of the branches, triangular, acuminate. **Ovary** terete, thin, not inflated, smooth. **Flowers** 10-50, simultaneous, resupinate; sepals, petals and basal half of column green, apical half of column and creamy white, disc of the lip immaculate, the margin of the lip often greenish; afternoon fragrance of wet hair. **Sepals** generally spreading, free, fleshy, narrowly spatulate-oblanceolate, the apical half concave, minutely apiculate, 5-veined, margin entire, spreading; the dorsal sepals rounded, lateral sepals subacute, oblique. **Petals** spreading the slightly reflexed, free, linear-oblanceolate, obtuse, 3-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate, strongly convex; bicallose, the calli prominent, thin, somewhat divaricate; disc with 3 fleshy, subacute keels, the mid-keel running to the apical sinus of the lip, the lateral pair shorter; lateral lobes subrectangular to dolabriform, margin undulate; midlobe bilobed, the lobes oblong, some divergent, apex truncate, margin irregular. **Column** straight, thin, long. **Clinandrium-hood** reduced, margin entire. **Anther** subspherical, 4-celled. **Pollinia** 4, "bird-wing" type, strongly laterally compressed, in the inner pair shorter. **Rostellum** subapical, slit. **Nectary** shallow, slightly penetrating the ovary, not inflated, smooth.

OTHER SPECIMENS: Without locality data, *Bernoulli 833*, BR! **MEXICO: Oaxaca:** cerca de Tuxtepec, 7 XI 2002, *Soto 10018*, AMO! Without locality data, Cult. Bot. Gard. Harv. Univ. *Russell s.n.*, AMES! **Chiapas:** S del Crucero San Javier, 295 m, 24 VIII 2002, *Aguilar 2207*, MEXU! Cascadas de Agua Azul, 28 VIII 1982, *Zamudio 477*, MEXU! **Quintana Roo:** Othón P. Blanco, N de la Unión, 0-50 m, 27 I 1999, pressed cult. 3 XII 1999, *Sánchez 552*, AMO! **Tabasco:** Teapa, 17 XI 1995, *Carrillo 16*, MEXU! Ibid. X 1990, *Ramón 419*, AMO! **GUATEMALA: Alta Verapaz:** Tactic, 4 VII 1941, *J. R. J. 1861*, AMES! Cobán, 1400 m, *Tuerckheim II 717*, US! **Chiquimula:** Montaña Nonojá, E of Camotán, 600-1800 m, 11 XI 1939, *Steyermark 31704*, F! **Izabal:** Río Dulce, pressed cult. 21 VIII 1978, *Ackerman 1298*, SEL! E of Lake Izabal, at entrance to Río Dulce, 29 VI 1982, *May & Craig Orchids 7116*, SEL! **Quiche:** Chichicastenango, pressed cult. 23 VIII 1982, *Hágsater 5338*, AMO x2! Ibid. 19 IX 1984, MEXU! UVAL! Ibid. 1 X 1986, K! **Petén:** La Cumbre, *Lundell s.n.*, MEXU! **BELIZE:** Mountain Pine Ridge, San Agustin, VIII 1936, *Lundell 6760*, MICH x3! Sittee River, IX 1930, *Schipp S 96*, AMES! Sittee river, *Schipp 896*, F! **Toledo:** Near Mafridyle Creek, 12 II 1952, *Gentle 7566*, LL! **HONDURAS: Comayagua:** Lake Yojoa, 2000 ft, 6 IX 1932, *Edwards 244*, AMES x2! Siguatepeque, Custeca, 3700 ft, 4 X 1932, *Edwards 275*, AMES! **Cortés:** Río Lindo, 2200 ft, 14 IX 1933, *Edwards 551*, AMES x2! MO! Ibid. 2000 ft, 21 IX 1933, *Edwards 560*, AMES! **COSTA RICA: Alajuela:** Tacacorí, 950 m, 2 IX 1925, *Alfaro 170*, AMES x4! US! Reserva Biologica-Carara, 30 m, 29 IX 1983, *Chacón 1395*, CR! MEXU! N de San José de la Montaña, pressed cult. 25 IX 1982, *Hágsater 6437*, AMO! Ibid. 23 VIII 1984, SEL! Ibid. 1 X 1986, CR! (Illustration voucher) entre Alto de Villegas y Angeles Norte de San Ramón, 1200 m, 16 X 1984, *Hágsater 6905*, USJ! **San José:** Valle del General, 1200 m, col. 9 III 1986, pressed cult. 23 IX 1991, *Hágsater 8267*, AMO! **PANAMA: Darién:** Cerro Mali, Parque Nacional del Darién, 1000-1200 m, 22 X 1987, *Hammel 16423*, MO! **Panama:** E of Panama City, sea level, VIII 1923, *Powell 3396*, AMES x4! Ibid. *Powell 3405*, AMES!

OTHER RECORDS: MEXICO: Quintana Roo: Manuel Crescencio Rejon, carretera a Cibalito, zona "El Danto", cerca de la Unión, frontera con Belize, 10 IX 2004, *Ibarra 265*, spirit, AMO! **GUATEMALA: Alta Verapaz:** Cobán, 1500 m, 18 I 1978, *Clason sub Hamer #A1*, color photo, AMO! **COSTA RICA:** Without data, 4 IX 1965, drawing by *R. L. Rodríguez s.n.*, slide, AMO! **Puntarenas:** Aguirre, Quebrada Arroyo, 1 VIII 2000, photographed 9 VI 2001, *Catelfranco 31*, color photo, (published in Hágsater, 2005).

DISTRIBUTION AND ECOLOGY: Widespread along the Atlantic coast from Mexico (Quintana Roo) to Panama, from seal level to 1800 m altitude. Flowering mainly from June to February.

RECOGNITION: *Epidendrum isthmii* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, and Paniculatum Subgroup which has green and white flowers, often marked with purple on the disc of the lip and apex of the column. The species is recognized by mid to tall plants (50-120 cm high), with a suberect, lax-flowered inflorescence, the greenish floral segments spreading, with the 3-lobed lip with the disc white and the margin frequently greenish. *Epidendrum veroscriptum* Hágsater, has somewhat taller plants (to 160 cm high) with the floral segments somewhat reflexed, green, and the disc of the lip generally marked with a semicircle of purple dots. *Epidendrum roseoscriptum* Hágsater has shorter plants (to 40 cm high), the flowers greenish yellow with the subentire lip with a solid pink blotch on the disc.



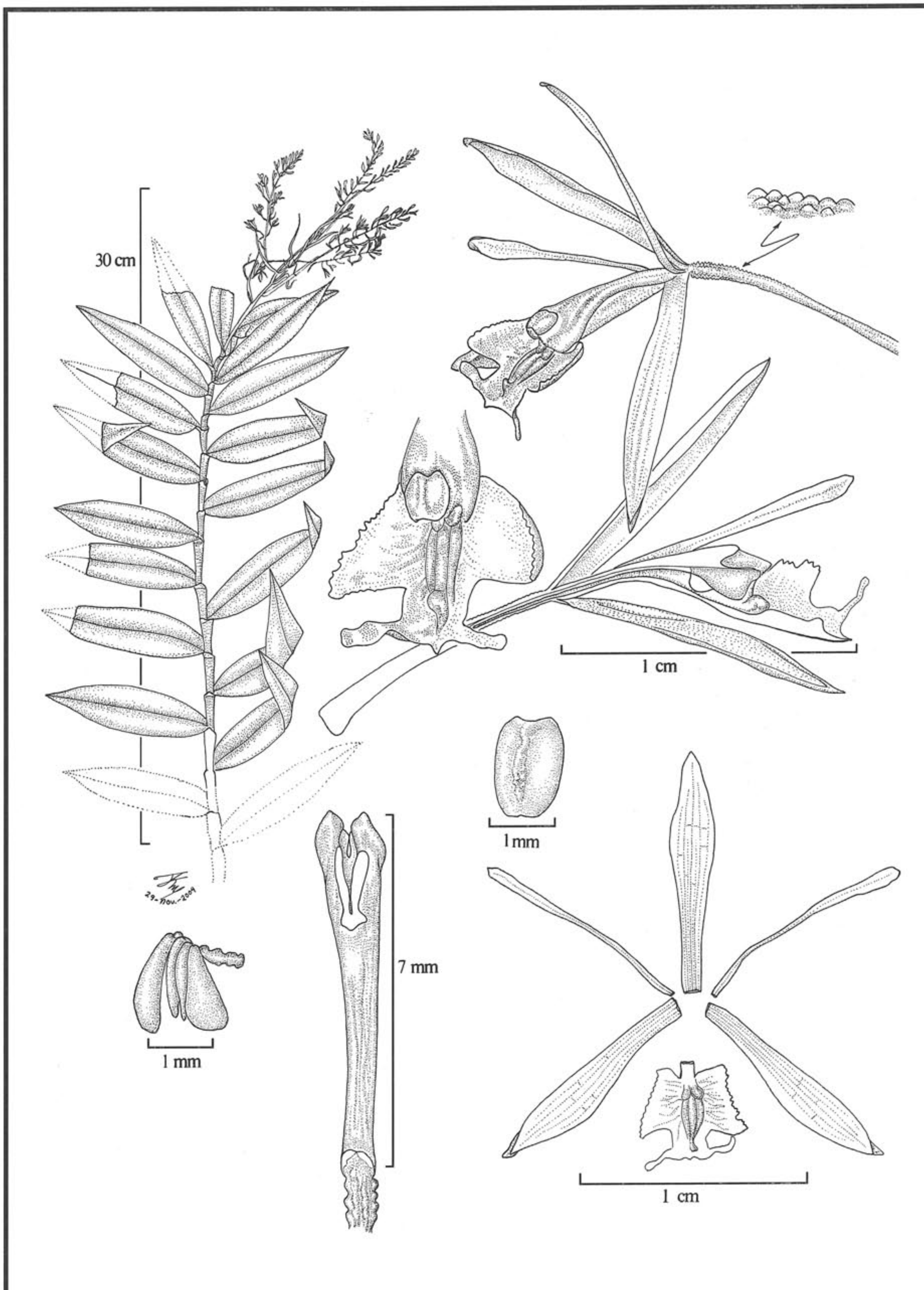
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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the type having been collected in Panama, in the Central American isthmus.

REFERENCES: Hágsater, E., 2005, *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 294, San José, Costa Rica. Editorial de la Universidad de Costa Rica.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM ISTHMOIDES Hágsater & E.Santiago **Plate 1133**

EPIDENDRUM ISTHMOIDES Hágsater *et* E.Santiago, *sp. nov.*

Type: COSTA RICA: Alajuela: Reserva Biológica Monteverde, Río Peñas Blancas, Campo 3, 900 m, 26 VI 1989, ***Erick Bello 1516.*** Holotype: INB! (Illustration voucher). Isotype: MO!

Epidendro pilifero Rchb.f. simile sed floribus minoribus immaculatis, segmentis floralibus leviter patentibus, labello trilobato isthmum brevem inter lobulos laterales et lobulum medium ferenti, lobulis lateralibus rectangularibus, margine regulari, differens.

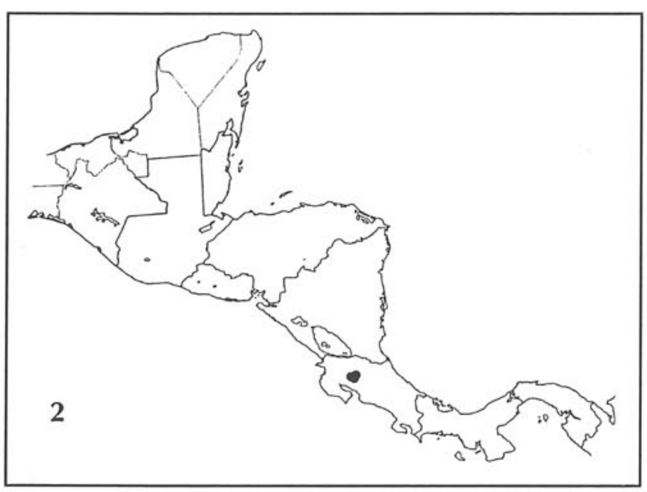
Hierba epífita o litófita, simpodial, cespitosa, de más de 100 cm de alto. **Raíces** basales, carnosas. **Tallos** sencillos, tipo caña, lateralmente aplanados, erectos, rectos, de más de 100 x 0.3-1.2 cm. **Hojas** ca. 9-11, distribuidas a lo largo del tallo, articuladas, alternas, cartáceas; vainas tubulares, lateralmente algo comprimidas, finamente estriadas, 11-50 x 3-14 mm; lamina elíptica, cortamente acuminada, con las nervaduras claramente resaltadas en el haz, margen entero, extendido, 13-23 x 3-5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, paniculada, suberecta, pluriflora, densa, 35-40 cm de largo; pedúnculo corto, delgado, algo lateralmente aplanado, recto, hasta 4.5 cm de largo; desprovisto de brácteas; las brácteas de las ramificaciones basales, muy prominentes, angostamente triangulares, conduplicadas, largamente acuminadas, abrazadoras, 4-13 cm de largo. **Brácteas florales** de tamaño variable, desde más cortas hasta más largas que el ovario, linear triangulares, largamente acuminadas, abrazadoras, 4-14 mm de largo. **Ovario** terete, delgado, no inflado, papiloso, 9-11 mm de largo. **Flores** 150-300, simultáneas, (aunque algunas apicales presentes aún en botón floral) resupinadas, de color verde cremoso; sin datos de fragancia. **Sépalos** entreabiertos, libres, oblongo oblanceolados, subagudos, 5-nervados, margen entero, extendido, 9-10 x 1.5-2 mm; los **laterales** oblicuos, con una quilla dorsal prominente. **Pétalos** entreabiertos, libres, filiformes, redondeados, 1-nervados, margen entero, extendido, 9 x 0.3 mm (ancho cerca del ápice). **Labelo** unido a la columna, trilobado, truncado en la base, 4 x 4 mm; bicalloso, los callos prominentes, subglobosos; disco con 3 quillas carnosas, romas, el par lateral más corto, la central alargada casi hasta el seno apical de la lámina, con una joroba cerca del ápice; lóbulos laterales rectangulares, margen dentado, 1.3 x 2.5 mm; lóbulo medio con un istmo corto en la base, el ápice bilobado, los lóbulos lineares, redondeados en el ápice, fuertemente divergentes, margen irregular, extendido, 1.5 x 3.6 mm. **Columna** recta, delgada, 7 mm de largo. **Clinandrio** reducido, margen entero. **Antera** subreniforme, con una quilla central, 4-locular. **Polinios** 4, tipo ala de pájaro, fuertemente comprimidos lateralmente, el par interior ligeramente más corto. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ca. de ½ del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando 1/3 del ovario, no inflado, liso. **Cápsula** no vista.

Epiphytic or lithophytic, sympodial, caespitose, tall **herbs. Roots** basal, fleshy. **Stems** simple, cane-like, laterally compressed, erect, straight, tall. **Leaves** ca. 9-11, distributed throughout the stem, articulate, alternate, chartaceus; sheaths tubular, laterally somewhat compressed, minutely striated; blade elliptic, short-acuminate, with the veins clearly marked on the upper side, margin entire, spreading. **Inflorescence** apical, flowering only once, paniculate, suberect, densely many-flowered; peduncle short, somewhat laterally flattened, straight, without bracts, the bracts of the lower branches very prominent, narrowly triangular, conduplicate, long-acuminate, amplexicaul. **Floral bracts** variable in size, from much shorter than to longer than the ovary, linear-triangular, long-acuminate. **Ovary** terete, thin, not inflated, papillose. **Flowers** 150-300, simultaneous (though some apical buds may be present), resupinate, creamy green. **Sepals** partly spreading, free, oblong-oblanceolate, subacute, 5-veined, margin entire, spreading; the lateral sepals oblique, with a prominent dorsal keel. **Petals** partly spreading, free, filiform, rounded, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base truncate; bicallose, the calli prominent, subglobosa; disc with 3 fleshy, rounded keels, the lateral keels somewhat shorter than the mid-keel with runs down to the apical sinus, with a small hump near the apex; lateral lobes rectangular, margin dentate; midlobe with a short isthmus at the base, the apex bilobed, the lobes linear, rounded at the apex, strongly divergent, margin irregular, spreading. **Column** straight, thin, long. **Clinandrium-hood** reduced, margin entire. **Anther** subreniforme, with a central keel, 4-celled. **Pollinia** 4, "bird-wing" type, strongly laterally compressed, the inner pair shorter. **Rostellum** subapical, slit. **Nectary** shallow, penetrating 1/3 of the ovary, not inflated, smooth.

OTHER SPECIMENS: COSTA RICA: Alajuela: Río Peñas Blancas, 900 m, 8 I 1987, *Haber 6768*, MO! Ibid. 23 VII 1987, *Haber 7342*, MO x2!

DISTRIBUTION AND ECOLOGY: Endemic to western Costa Rica on the Atlantic slope, growing Epiphytic and lithophytic, at 900 m altitude. Flowering from January to June.

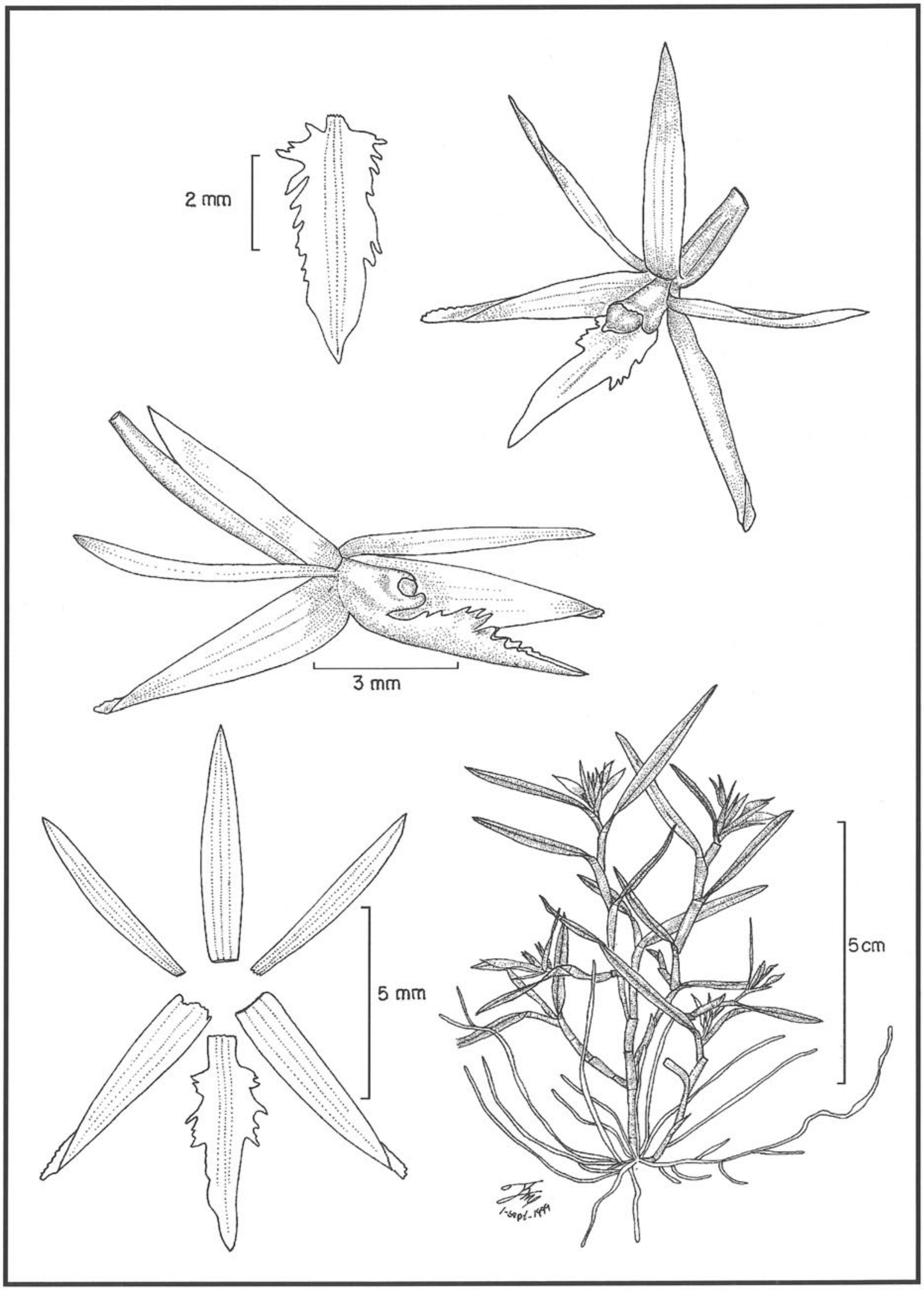
RECOGNITION: *Epidendrum isthmoides* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, and Paniculatum Subgroup which has green and white flowers, often marked with purple on the disc of the lip and apex of the column. The species is recognized by the large plants, chartaceus, elliptic leaves with the veins clearly marked, (13-23 x 3-5 cm.); the creamy green flowers with the floral segments partly spreading, sepals 9-10 mm long, the lip immaculate, with a short isthmus between the lateral lobes and the midlobe. *Epidendrum isthmii* Schltr. has shorter, narrower, lanceolate to elliptic-lanceolate leaves (5.5-13 x 1.3-3.4 cm), a few-flowered inflorescence with larger flowers, sepals 13-15.5 mm long, the flowers greenish with the disc of the lip creamy white. *Epidendrum piliferum* Rchb.f. is vegetatively similar in size, but the flowers are larger, green, with the lip and apex of the column white, the disc with 5 purple lines, the reflexed sepals 12.5-17 mm long. *Epidendrum horichii* Hágsater has shorter plants, 37-75 cm tall, the elliptic to lanceolate leaves 3.5-15 cm long, the flowers green with the white lip often marked with a purple blotch.



CONSERVATION STATUS: DD. Data deficient. Known from few highly localized collections in a protected area.

ETYMOLOGY: Derived from the Greek ισθμος a narrowing, and the suffix –οιδες, resemblance, in reference to the superficial similarity of the species with *E. isthmii*, especially the illustration prepared from the type of that species by Schlechter, with the very angular lateral lobes of the lip, the wide isthmus, and the apical lobes.

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EPIDENDRUM LACERATUM C.Schweinf.

Plate 1134

EPIDENDRUM LACERATUM C.Schweinf., Bot. Mus. Leafl. 15(5): 143. 1952.

Type: PERU: Cuzco: Prov. Paucartambo; Sta. Isabel to Asunción, 1800 m, 4 January 1946, ***C. Vargas 5583***. Holotype: AMES!

Hierba epífita cespitosa a colgante, 4.5-7 cm de largo en el tipo. **Raíces** filiformes, de la base de la planta, y la base de las ramas, ca. 0.5 mm de grosor. **Tallos** de la base de la planta y de la parte media y superior de los tallos anteriores en plantas adultas; teretes, algo flexuosos, delgados, 1.5-4 cm de largo, 1-2 mm de grosor. **Hojas** 2-5, distribuidas a lo largo de todo el tallo, equidistantes; vainas foliares aparentemente teretes, estriadas 5-10 x 1-2 mm; laminas articuladas, linear lanceoladas, agudas, desiguales; 15-37 x 2-4 mm. **Inflorescencia** apical, cortamente racemosa, umbeliforme, 10-15 mm de largo. **Brácteas florales** lanceoladas a triangulares, acuminadas, dorsalmente carinadas, progresivamente más pequeñas, las basales más largas que el ovario, 9-18 mm de largo. **Flores** 3-7, sucesivas, resupinadas, blancas. **Ovario** 5-6.5 mm de largo, inflado ligeramente en la mitad apical sin formar vesícula. **Sépalos** linear-lanceolados, agudos, 3-nervados, extendidos, los laterales dorsalmente carinados y aristados, margenes de la carina erosos, 5.5-6 x 11-13 mm. **Pétalos** extendidos, linear-elípticos, agudos, 3-nervados (descritos e ilustrados por Schweinfurth como 1-nervados), 5-5.5 x 0.6-1.2 mm. **Labelo** unido al vientre de la columna, de figura ovado a lanceolado, márgenes laterales profundamente lacerado-dentados, la parte apical triangular obtusa y de márgenes enteros, cóncavo en la base, sin callos, 3-nervado, 4.8 x 2.2-4.5 mm. **Columna** recta, corta, con un diente de cada lado en el ápice, 2.0-2.7 mm de largo incluyendo el clinandrio. **Clinandrio** reducido, entero a eroso. **Antera** cordado-ovoide, 4-locular. **Polinios** 4, obovados, lateralmente comprimidos. **Rostelo** no visto. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** no vista.

Epiphytic, pendent **herbs**, new stems produced from the base or from the middle of the previous stem in older plants. **Stems** terete, flexuous. **Leaves** articulate, linear-lanceolate, acute, unequal. **Inflorescence** apical, short racemose, umbelliform. **Flowers** 3-7, successive, white. **Floral Bracts** lanceolate to triangular, acuminate, dorsally carinate, progressively smaller, the basal ones longer than the ovary. **Ovary** neither inflated nor forming a vesicle. **Sepals** linear-elliptic, acute, 3-veined, the laterals dorsally keeled and aristate, the keel erose. **Petals** linear-elliptic, acute, 3-veined (described & illustrated by Schweinfurth as 1-veined). **Lip** ovate to lanceolate in outline, lateral margins deeply lacerate dentate, apex triangular, obtuse with entire margins, concave at base, ecallose, 3-veined. **Column** straight, short, with a prominent tooth on each side of the apex. **Clinandrium-hood** reduced, entire to erose. **Anther** cordate-ovoid, 4-celled. **Polinia** 4, obovoid, laterally compressed.

OTHER SPECIMENS: ECUADOR: Pastaza: 10 km N of Puyo, 750 m, flowers white [in bud], 21 III 1976, *Luer 943*, RPSC! (Illustration voucher). **Zamora-Chinchipe:** NW base of Cordillera del Condor, 1350-1650 m, 18 V 1988, *Hirtz 3774*, RPSC! **PERU: Amazonas:** Cordillera de Colón, E. la Peca, 9600 ft, 28 VIII 1978, *Barbour 3238*, MO! **Cusco**: 31 km E. of Pillcopata, *Fernández 55*, USM! Santa Isabel-Kosnipata, 1250 m, 3 I 1946, *Vargas 5538*, CUZ!

DISTRIBUTION AND ECOLOGY: Known from wet montane forests on the eastern slope of the Andes in central Ecuador and Peru, and the Cordillera del Condor, at 750-1800 m altitude. Flowering January to May.

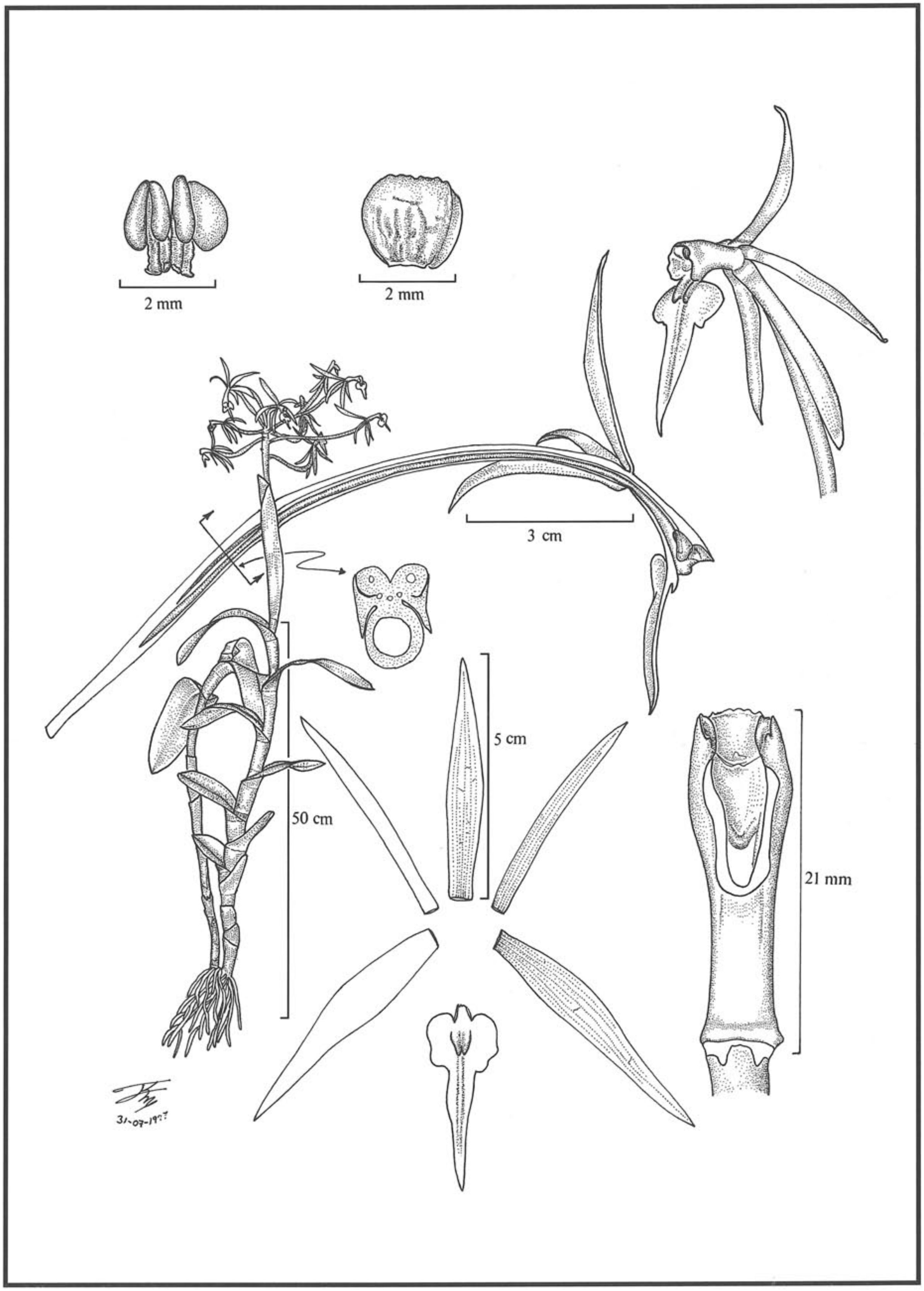
RECOGNITION: *Epidendrum laceratum* belongs to the Cardiophyllum Group, Batesii Subgroup, which is characterized by the main stem with a subapical branching habit, acute leaves, successive flowers, opening one at a time, deep nectary, entire to 3-lobed lip with the lateral lobes more or less fimbriate to erose. The species is distinguished by the short stems, long and narrowly lanceolate leaves and successive, small, flowers, sepals are 5.5-6 mm long, the deeply lacerate-dentate lip. It is similar to *Epidendrum farallonense* Hágsater which has lanceolate-elliptic leaves, narrowly lanceolate, rounded, 3-veined petals and a large, rectangular, truncate midlobe of the 3-lobed lip. *Epidendrum oxybatesii* Hágsater & Dodson has narrowly elliptic leaves, 15-16 mm long sepals, 3-veined petals, deeply 3-lobed lip with the semiovate lateral lobes crenate to laciniate, the acicular midlobe and the nectary penetrating ¾ of the ovary. *Epidendrum batesii* Dodson has narrowly lanceolate leaves, less deeply 3-lobed lip with the midlobe short and truncate and the nectary penetrating nearly all the ovary. *Epidendrum acrobatesii* Hágsater & Dodson has sepals 11-12 mm long, narrow, linear-oblanceolate, 1-veined petals and a truncate, obcuneate midlobe. *Epidendrum silverstonei* Hágsater has oblanceolate, rounded, 3-veined petals and an entire, suborbicular, deeply cordate lip.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: The name refers to the lacerate margins of the lip which characterize the species.

Author: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM LACUSTRE Lindl.

Plate 1135

EPIDENDRUM LACUSTRE Lindl., Fol. Orch. Epidendrum 50, no. 157. 1853.

Basionym: *Epidendrum leucochilum* Lindl., Orch. Linden. 8. 1846. Type: VENEZUELA: Mérida: Wild in Venezuela, on half-submerged rotten trees in the marshes of Laguneta, at the height of 8000 feet, ***Linden 684***. Holotype: K-L! Isotype: W4326! [Non *Epidendrum leucochilum* Link, Klotzsch & Otto]

Synonym: *Epidendrum obesum* Ames, Schedul. Orchid. 2: 31, 1923. Holotype: COSTA RICA: Las Lajas de San Isidro, 1800 m, September. 1900, ***H. Pittier 14053***. Holotype: US 577951! Fragment of type AMES 22655!

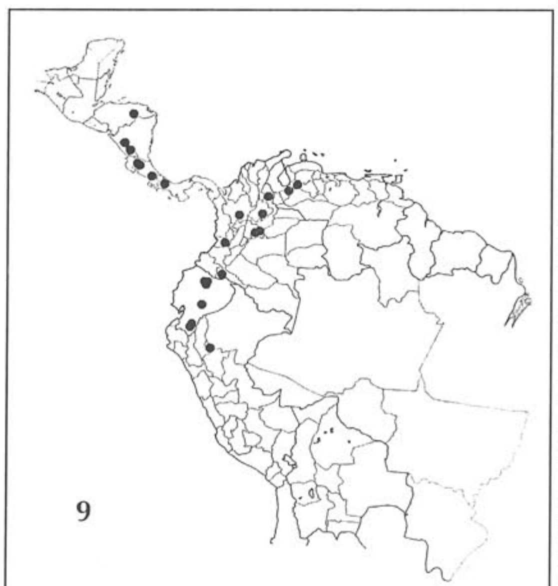
Hierba epífita o litófita, simpodial, cespitosa, 30-100 cm de alto o más. **Raíces** basales, carnosas, gruesas, 1.5-3.0 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos a ancipitosos, con 2-3 vainas basales, papiráceas, 15-40 x 0.5-1.3 cm. **Hojas** 3-13, distribuidas a lo largo del tallo, dísticas, en ocasiones imbricadas; vaina foliar ancipitosa, lisa, 3-7 cm de largo; lámina ovada elíptica, bilobada a retusa, subcoriácea, lisa, verde claro raramente algo moradas en el envés, margen entero, extendido; 4-23 x 2.0-7.5 cm. **Brácteas espatáceas** 1-2 raramente 3, prominentes, conduplicadas, oblongas, redondeadas, 6-18 x [2]3-7 cm. **Inflorescencia** apical, del crecimiento maduro, florece una sola vez, racemosa, erecta, 15-40 cm de largo; pedúnculo ligeramente más largo que las brácteas espatáceas, terete, no ornamentado, 7-20 cm de largo. **Bráctea floral** mucho más corta que el ovario, triangular, aguda, 2-4 mm de largo. **Flores** [3]5-15[30], simultáneas, resupinadas, sépalos y pétalos verde, verde claro a verde amarillentos, labelo, callos y columna blanco, raramente con el ápice del lóbulo medio verde; fragancia nocturna a *Gardenia*. **Ovario** terete, no inflado, no ornamentado, 70-140 cm de largo. **Sépalos** extendidos a ligeramente reflexos, libres, glabros, linear lanceolados, acuminados a agudos, 7-nervados, con nervaduras secundarias adicionales, pareciendo ser 9 nervados, margen entero, revoluto, 30-60 x 4-8 mm; sépalos laterales oblicuos. **Pétalos** extendidos, linear lanceolados, acuminados, 3-nervados, con nervaduras secundarias adicionales, pareciendo ser 5-nervados, margen entero, extendido, 34-50 x 3-5 mm. **Labelo** unido a la columna, depreso en posición natural, oscuramente, o en ocasiones claramente trilobado, base truncada, margen entero, extendido, 20-60 x 10-20 mm; bicalloso, callos prominentes, cónicos, disco con una carina central, la cual se prolonga hasta cerca del ápice del lóbulo medio; lóbulos laterales semiorbiculares a dolabriformes, 5-9 x 4-5 mm; lóbulo medio triangular, acuminado, en ocasiones reflexo, 10-22 x 2-4 mm. **Columna** ligeramente arqueada, dilatada en la mitad apical, 20-30 x 2.5-4 mm. **Clinandrio** corto, margen eroso. **Antera** semiesférica, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más largos que los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de 2/3 de la cavidad estigmática. **Nectario** penetrando casi todo el ovario, delgado, liso. **Cápsula** elipsoide, pedicelo de 5.5 x 1.8 mm, cuerpo de 4.3 x 2.1 cm, localizado hacia el ápice, cuello apical, 2 x 0.3 cm.

Epiphytic or lithophytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, laterally compressed to ancipitose, the base covered by 2-3 leafless sheaths. **Leaves** 3-13, distributed throughout the stem, distichous, sometimes imbricating; sheath ancipitose, smooth; blade ovate-elliptic, bilobed to retuse, subcoriaceous, smooth light green, rarely dorsally somewhat tinged purple, margin entire, spreading. **Spathaceous bracts** 1-2, rarely 3, conduplicate, oblong, prominent, rounded. **Inflorescence** apical, from the mature growth, flowering only once, racemose, erect; peduncle slightly longer than the spathaceous bracts, terete, smooth. **Floral bract** much shorter than the ovary, triangular, acute. **Flowers** [3]5-15[30], simultaneous, resupinate, sepals and petals green, light green or yellowish green, lip, calli and column white, the apex of the lip rarely green; ragrance of *Gardenia*. **Ovary** terete, not inflated, smooth, long. **Sepals** spreading to slightly reflexed, free, glabrous, linear-lanceolate, acuminate to acute, 7-veined, with a pair of secondary veins so as to appear 9-veined, margin entire, revolute, lateral sepals oblique. **Petals** spreading, linear-lanceolate, acuminate, 3-veined, with secondary veins so as to appear 5-veined, margin entire, spreading. **Lip** united to the column, depressed in natural position, obscurely, or sometimes clearly 3-lobed, base truncate, margin entire, spreading; bicallose, calli prominent, conical, disc with a central keel, prolonged onto the midlobe; lateral lobes semiorbicular to dolabriform; midlobe triangular, acuminate, sometimes reflexed. **Column** slightly arching, dilated along the apical half. **Clinandrium-hood** short, margin erose. **Anther** semi spherical, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** penetrating nearly the whole of the ovary, thin, smooth. **Capsule** ellipsoid, with a short pedicel, and a long apical neck.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widely distributed in Honduras, Nicaragua, Costa Rica, Panamá, Colombia, Venezuela, Ecuador and Perú. Growing in montane rain forest, and cloud forest, epiphytic and lithophytic, from [300] 900 to 2650 [2800] m altitude. Flowering throughout the year, mainly May to September.

RECOGNITION: *Epidendrum lacustre* belongs to the Excisum Group, Leucochilum Subgroup, characterized by the caespitose plants with cane-like, erect stems, fleshy leaves, the base of the inflorescence with 1-2, spathe-like bracts, star-shaped flowers with narrow sepals and petals, and a prominent, acuminate, lip. The species is recognized by the laterally compressed to ancipitose stems, generally wide, occasionally imbricating leaves, to 7 cm wide, racemose, 5-15-flowered, inflorescence, sepals and petals green, light green to yellowish green, lip, calli and column white, the midlobe rarely green, the lip obscurely to clearly 3-lobed, without deep sini separating the midlobe from the lateral lobes, disc of the lip with a central keel running down to the midlobe. *Epidendrum leucochilum* Link, Klotzsch & Otto, ranges in the Andes of Venezuela to southern Ecuador on the western Andes, has terete to somewhat compressed, but not ancipitose stems, coriaceous leaves, and the 3-lobed lip is divided by deep sini, the lateral lobes transversely ovoid, and the midlobe ligulate, acute. *Epidendrum lehmannii* Rchb.f. similar to the latter species, ranges on the eastern Andes of Ecuador and Peru, has few, very wide leaves and smaller flowers. The star-shaped flowers are reminiscent of *Epidendrum nocturnum* Jacq. which lacks spathaceous bracts, and produces several, distichous, apical inflorescences which develop one flower at a time over several years.

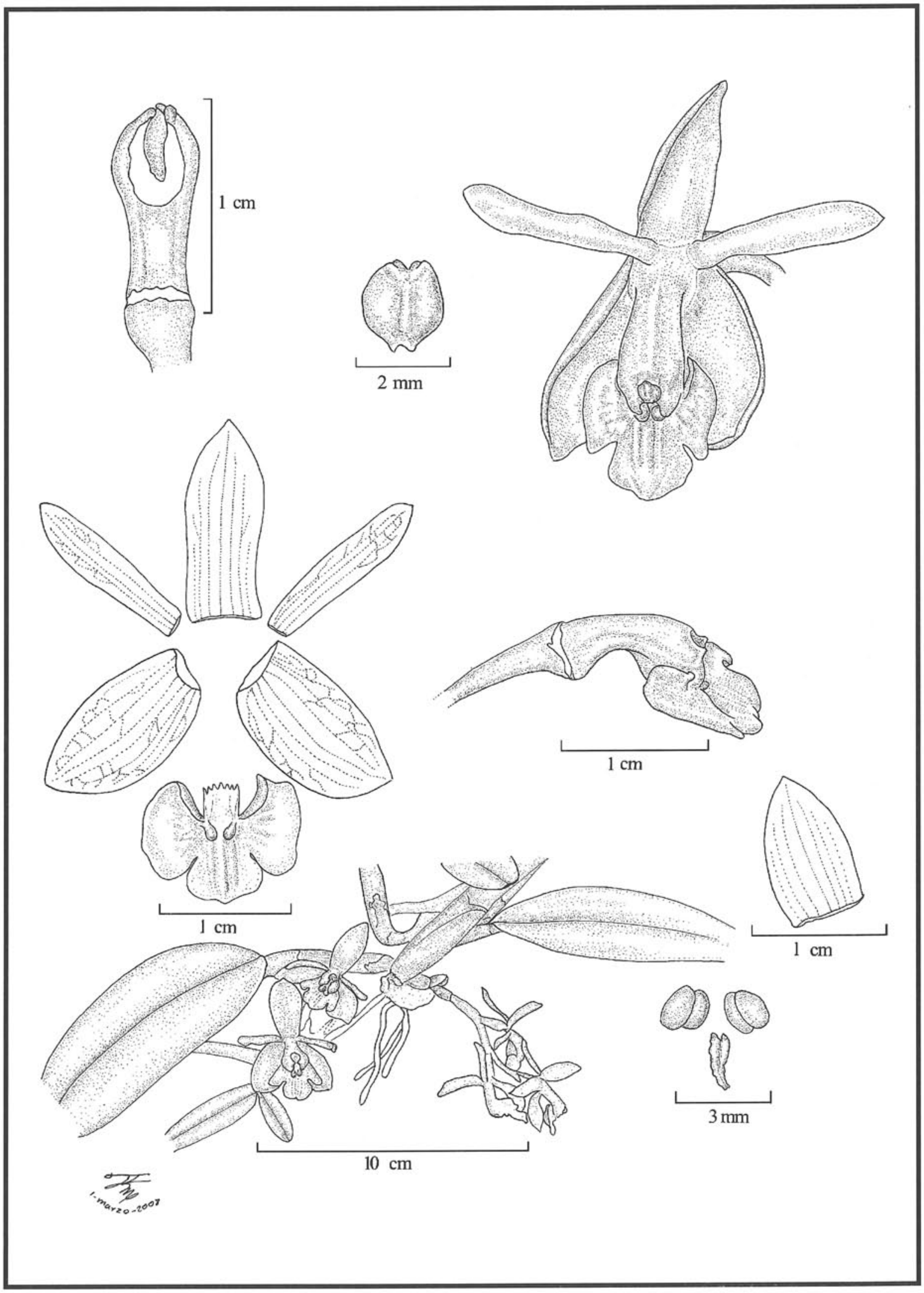


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CONSERVATION STATUS: DD. Data Deficient. Widespread, sometimes colonies numerous.

ETYMOLOGY: From the Latin *lacustris*, inhabiting lakes, as the type specimen was collected on trees in marshes.

REFERENCES: Hamer, F. 2001. Orchidaceae, *in* Stevens, W.D., Ulloa C. U., Pool, A. & O. M. Montiel. **Flora de Nicaragua** Vol. 85 (2): 1886. E. A. Christenson, 2002. *Epidendrum lacustre*, **The Orchid Review** 110 (1247): 296-297. Hágsater, E., García-Cruz, J. & L. Sánchez, 2003. Epidendrum, *in* Hammel, B. E., Grayum, M.H., Herrera & N. Zamora. **Manual de Plantas de Costa Rica**, III: 137.



EPIDENDRUM LATERALE Rolfe

Plate 1136

EPIDENDRUM LATERALE Rolfe, Orch. Rev. 20: 280, 319. 1912, nomen; Orch. Rev. 28: 160. 1920.

Lectotype (here designated): Costa Rica: Hort. St. Albans, 30 December 1910, *Sander no. 15*, K!*

Auliza laterale (Rolfe) Brieger, nom. illeg. Orchideen (Schlechter), 3 ed. 1 (9 lieferung): 547. 1977.

Hierba epífita, simpodial, cespitosa, 12.5-15 cm de alto. **Raíces** basales, carnosas, delgadas, blancas, 1.5 mm grosor. **Tallo** formando un seudobulbo ligeramente engrosado, largamente cilíndrico, delgado, verde, 5-7.5 x 1.0-1.3 cm (en ejemplares herborizados); parcialmente cubiertos por una 1 o 2 vainas, escariosas, fibrosas con el tiempo. **Hoja** 1, en el ápice del seudobulbo, articulada, erecta; lámina oblonga, conduplicada en la base, obtusa y diminutamente bilobada en el ápice, coriácea, margen entero, 7.5 x 2.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida de un seudobulbo rudimentario, sencilla, dística, florece una sola vez, pauciflora, laxa, erecta a arqueada, 3.8-6 cm de largo; pedúnculo delgado, lateralmente aplanado, erecto, recto, corto, 2-4 cm de largo, provisto en la base de 1-3 brácteas, anchamente ovadas al extenderse, subagudas, infundibuliformes, amplexicaules, parcialmente imbricadas, margen diminutamente papiloso, 11.5-13 mm de largo. **Brácteas florales** prominentes, ligeramente más largas que el ovario, anchamente triangular ovadas, subagudas, abrazadoras, margen crenulado, 7-11 mm de largo. **Ovario** terete, engrosado gradualmente hacia el ápice, estriado, 10 mm de largo. **Flores** 2-6, simultáneas, dísticas, resupinadas, carnosas, de color verde claro, concoloras; sin datos de fragancia. **Sépalos** libres, elípticos, subagudos, 7-nervados, margen entero, 15 x 5.5-7.0 mm; el dorsal extendido; los laterales porrectos, oblicuos. **Pétalos** ligeramente reflexos, libres, linear oblanceolados, subagudos, 3-nervados, margen entero, 14 x 2.0 mm. **Labelo** unido a la columna, 3-lobado, extendido, cordado en la base, 10 x 11 mm; bicalloso, los callos lateralmente aplanados, paralelos; disco provisto de 3 quillas, bajas que se fusionan en el ápice para formar una sola quilla ancha y carnosa que se desvanece en el ápice de la lámina; lóbulos laterales dolabriformes, ligeramente convexos, margen eroso crenado, 5 x 8 mm; lóbulo medio angostamente obovado, (cuneado en la base y ensanchado en el ápice), obtuso, diminutamente apiculado, margen entero, 5 x 5 mm. **Columna** arqueada, delgada, 10 mm de largo. **Clinandrio** reducido, margen entero. **Antera** 4-locular, reniforme, con un par de dientes diminutos en el ápice. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, muy cortas. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** y **Nectario** no vistos. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thin. **Stem** forming a slightly thickened, long, cylindrical pseudobulb, partly covered by 1-2 scarious, sheaths, becoming fibrous with time. **Leaf** single, apical, articulate, erect; blade oblong, base conduplicate, apex obtuse and minutely bilobed, coriaceous, margin entire. **Inflorescence** apical, from a rudimentary pseudobulb, simple, distichous, flowering only once, lax, few-flowered, erect to arching; peduncle thin, laterally compressed, erect, straight, short; provided at the base by 1-3 widely ovate, subacute, amplexicaul, infundibuliform, partially imbricating bracts, margin minutely papillose. **Floral bracts** prominent, slightly longer than the ovary, widely triangular-ovate, subacute, amplexicaul, margin crenulate. **Ovary** terete, gradually thickened towards the apex, striated. **Flowers** 2-6, simultaneous, resupinate, fleshy, pale green, concolor. **Sepals** free, elliptic, subacute, 7-veined, margin entire; the dorsal sepals spreading, the lateral sepals porrect, oblique. **Petals** slightly reflexed, free, linear-oblanceolate, subacute, 3-veined, margin entire. **Lip** united to the column, 3-lobed, spreading, base cordate; bicallose, the calli laterally compressed, parallel; disc provided with 3 low keels which are fused towards the apex to form a single, wide, fleshy keel which disappears before the apex of the midlobe; lateral lobes dolabriform, slightly convex, margin erose-crenate; midlobe narrowly obovate, cuneate at the base, widened towards the obtuse apex, minutely apiculate, margin entire. **Column** arching, thin. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, reniform, with a pair of minute teeth at the apex. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, very short. **Rostellum** subapical, slit.

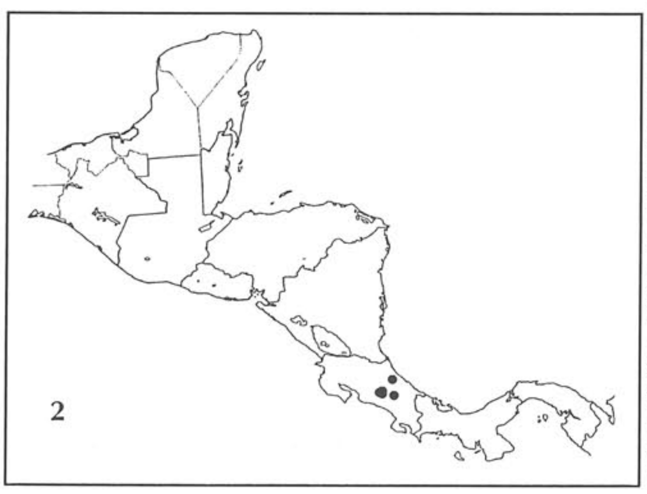
OTHER SPECIMENS: COSTA RICA: Hort. J. J. Neale, August 1906, K! **Cartago:** Cult. ex Hort. Bot. Basiliensis, 5 I 1995, *Renz 16132*, RENZ! Cult. Jardín C. H. Lankester, 30 I 1975, *Rodríguez 1464*, USJ! Lankester´s garden, Las Concavas, *Lankester s.n.*, SEL! Las Cóncavas, 2 XII 1918, *Lankester 54*, K! Cachi, 3500 ft, *Lankester sub Hort. Kew 192-20*, K!, Photo AMES!

OTHER RECORDS: COSTA RICA: Watercolor by "M. Smith", 5 September 1911, Hort. Lynwood Park road, Penarth, Mr. H. Hadden, gardener to J.J. Neale, Esq., K! Without locality, Hort. at Gala Botanical Garden, photographed 21 V 1999, color photo, in F. Pupulin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1: 298, San José, C.R., Editorial de la Universidad de Costa Rica; Without locality data, *Mason 2235*, spirit, K **Cartago:** Cachí, ca. 3500 ft, *Lankester s.n.*, note published in Orch. Rev. 28: 160. 1920; Las Concavas, XII 1922, *Lankester 372*, note published in Schedul. Orchid. 5: 30, 1923. **Limón:** Siquirrés, II 1972, *Horich sub Hágsater 2392*, spirit and slide, AMO! (Illustration voucher)

DISTRIBUTION AND ECOLOGY: Ranging from central Costa Rica, epiphytic, growing at 1050 m altitude. Flowering in cultivation in January and February.

RECOGNITION: *Epidendrum laterale* belongs to the Laterale Group which is characterized by the sympodial, caespitose plants with fusiform, 1-leaved pseudobulbs, and a simple, distichous, apical inflorescence, from a rudimentary pseudobulb, the flowers, fleshy, pale green. The species is recognized by the 3.8-6 cm long inflorescence with 2-6 flowers, the elliptic sepals 15 x 5.5-7 mm, the midlobe of the lip narrowly obovate, cuneate at the base and rounded at the apex, the ovary 10 mm long. It is generally very similar to *Epidendrium rousseausae* Schltr. from Panama and Colombia, which has a longer inflorescence, 5.5-13 cm long, with 4-8 flowers which are smaller, the sepals being 9-12 x 2-4 mm, the midlobe of the lip oblong at the base, and suborbicular towards the apex, and the ovary shorter, 5-6 mm long.

***NOTE:** The first mention of *E. laterale*, which includes a very brief, non-valid description, refers to a meeting of the Royal Horticultural Society on August 27, 1912, at which R. A. Rolfe was present, and a plant belonging to J. J. Neale was presented. It is only in 1920 that Rolfe gives a longer description of the species, and mentions 3 specimens, the first he recorded (Sander's), the J. J. Neale specimen of 1912, and a live plant brought to Kew by C. H. Lankester from Cachí, Costa Rica. Previously, a specimen had been prepared from a *Neale* collection in 1906 (K!), and an illustration prepared on September 5th, 1911, both before the 1912 RHS meeting. Ames (1923) cites *Lankester 192* as the type, but that must be a mistaken citation and probably refers to a Kew accession number *192-20*, a plant brought in to Kew in 1920. *Lankester 192* corresponds to *Epidendrum laucheanum*, and a specimen is found at AMES! We have chosen the *Sander* specimen as the lectotype because it bears pseudobulbs, a leaf and an inflorescence, and is the first specimen seen and cited in Rolfe's 1920 more complete description.

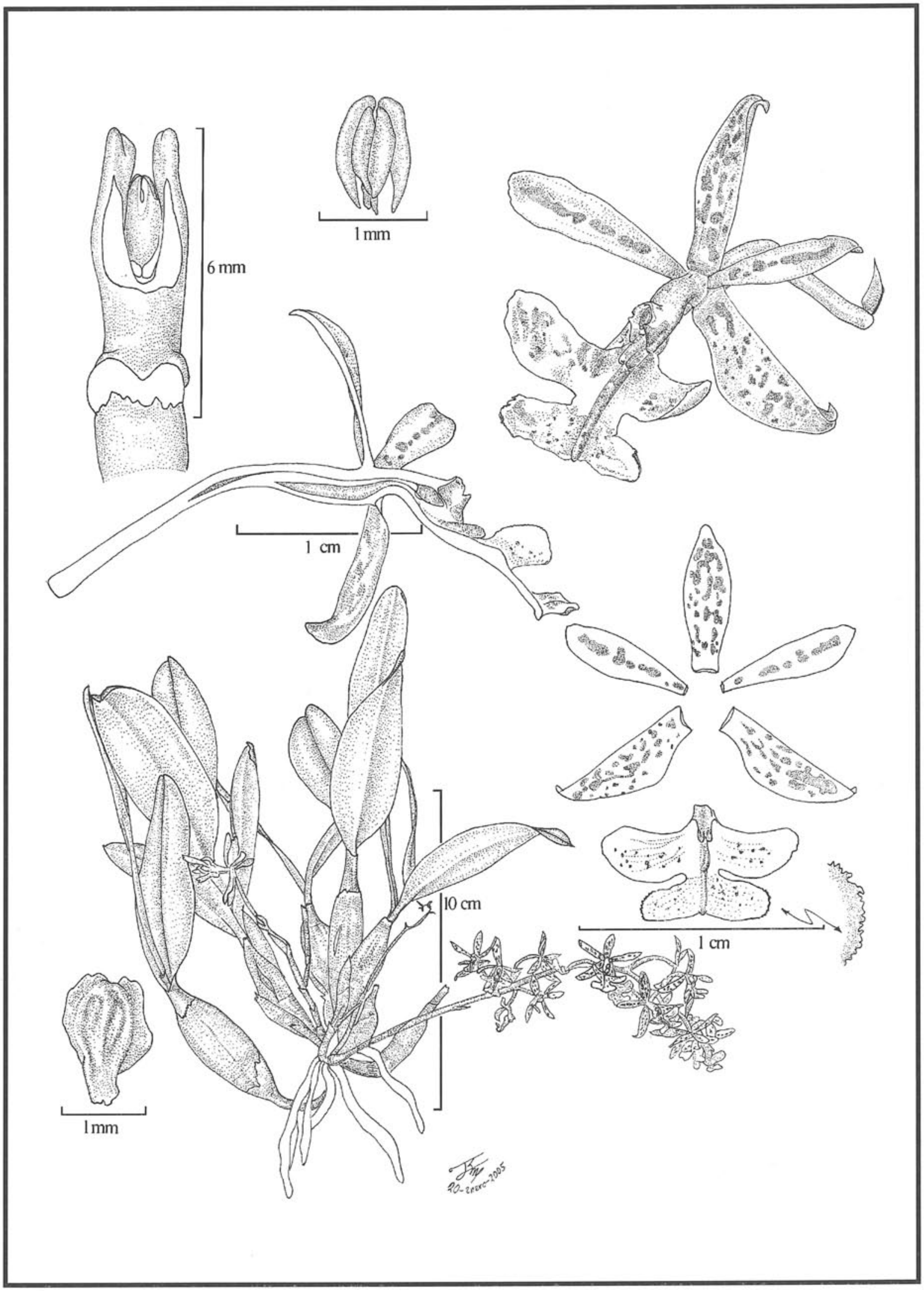


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *lateralis*, in reference to the inflorescence which is produced from the base of the pseudobulb, and thus appearing lateral, a rare feature in the genus.

REFERENCES: Ames, O., 1923, *New or noteworthy orchids from Central America and Philippine Islands*, **Sched. Orchid.** 3: 19; Ames, O., 1923, *New or noteworthy orchids from Central America and Philippine Islands*, **Sched. Orchid.** 5: 29; Hágsater, E., 2005, *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 298, San José C.R. Editorial de la Universidad de Costa Rica.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM LEEANUM (Rchb.f.) Hágsater Plate 1137

EPIDENDRUM LEEANUM (Rchb.f.) Hágsater, *comb. et stat. nov.*

Basionym: *Epidendrum stamfordianum* Bateman var. *leeanum* Rchb. f., Gard. Chron. Ser. 3, 3: 521. 1888. Type: COLOMBIA: ***Alexander Wallace s.n.*** Holotype: watercolor of floral segments W 29520!; pro parte, upper right hand corner W 52112!

Hierba epífita, simpodial, cespitosa, de 13-24 cm de alto. **Raíces** basales, carnosas, gruesas, 3.2-3.5 mm de grosor. **Tallos** formando pseudobulbos fusiformes, delgados, homoblásticos, con un pedicelo delgado 3.5-12 x 0.4-1.6 cm; cubiertos por vainas tubulares, finamente estriadas, escariosas, fibrosas con el tiempo, 10-40 mm de largo. **Hojas** 2-3, agregadas hacia el ápice de los pseudobulbos, alternas, articuladas, erecto extendidas; vaina foliar tubular, finamente estriada, 8-11 mm de largo; lámina oblonga a lanceolada, subaguda, coriácea, margen entero, 5-11 x 1.3-3 cm. **Bráctea espatácea** ausente. **Inflorescencia** originándose del ápice un pseudobulbo abortivo, de manera que parece basal del rizoma, racemosa a paniculada, compacta, ligeramente arqueada, 13-15 cm de largo; pedúnculo terete, delgado, 40-75 mm de largo; provisto de 4 a 6 brácteas tubulares, acuminadas, finamente estriadas, amplexicaules, las basales imbricadas, 5-15 mm de largo. **Brácteas florales** mucho más cortas que el ovario, abrazadoras, triangulares, agudas, 2-6 mm de largo. **Flores** 13-30, simultáneas, resupinadas, sépalos y pétalos amarillo verdosos con manchas lila rosado a lo largo de las nervaduras; labelo y columna blancos, teñidos de rosa con puntos escarlata; fragancia vespertina, dulce. **Ovario** terete, delgado, liso, ligeramente inflado detrás de los sépalos, 12-19 mm de largo. **Sépalos** extendidos, libres, oblanceolados, agudos, 3-nervados, las nervaduras laterales ramificadas desde la base dando la apariencia de ser 5-nervados, margen entero, 11-13 x 3.8-4.0 mm; los **laterales** oblicuos, con una quilla dorsal diminuta. **Pétalos** extendidos, libres, oblanceolados, redondeados, 1-nervados, la nervadura ramificada desde la base dando la apariencia de ser 3-nervados, margen apical ligeramente eroso, extendido, 11-13 x 2.8-3.0 mm. **Labelo** unido a la columna, trilobado, cuneado en la base, 7.0-7.5 x 14-16 mm; bicalloso, los callos digitiformes, paralelos, cortos; con una quilla intercallosa, delgada, lisa, alargada hasta el ápice del lóbulo medio; lóbulos laterales divaricados, oblongos, redondeados, ligeramente arqueados hacia atrás, margen entero, 6.0-7.5 x 3.0-4.0 mm; lóbulo medio formando un istmo angosto en la base, bilobado, apiculado, formado por dos lóbulos divaricados, oblongos, redondeados, margen denticulado, 3.5-3.8 x 9.0-10 mm. **Columna** ligeramente arqueada en la base, delgada, gradualmente dilatada hacia el ápice, 6 mm de largo. **Clinandrio** corto, en forma de embudo, margen 4-lobulado, los lóbulos dorsales redondeados, los laterales agudos. **Rostelo** apical, hendido. **Antera** obovoide, 4-locular. **Polinios** 4, tipo ala de pájaro, desiguales, el par interior más pequeño, lateralmente aplanados, ancipitosos. **Nectario** penetrando ca. de 1/3 del ovario, delgado, no inflado, liso. **Cápsula** no vista.

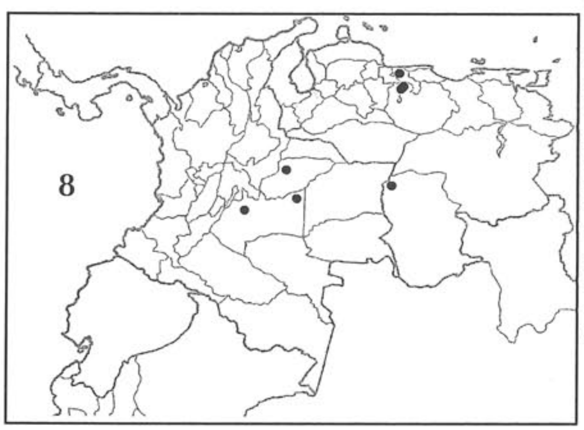
Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** forming fusiform, homoblastic pseudobulbs with a thin pedicel, covered by tubular sheaths, minutely striated, scarious, becoming fibrous with time. **Leaves** 2-3, aggregate towards the apex of the pseudobulb, alternate, articulate, erect-spreading; sheath tubular, minutely striated; blade oblong to lanceolate, subacute, coriaceous, margin entire. **Inflorescence** originating from an abortive pseudobulb, so as to appear basal from the rhizome, racemose to paniculate, compact, slightly arching; peduncle terete, thin, provided with 4-6 tubular, acuminate bracts, these minutely striated, amplexicaul, the basal ones imbricating. **Floral bracts** much shorter than the ovary, triangular, acute. **Flowers** 13-30, simultaneous, resupinate, sepals and petals greenish yellow with lilac-rose spots along the veins, lip and column white tinged with pink, with scarlet dots; fragrance vespertine, sweet. **Ovary** terete, thin, smooth, slightly inflated behind the sepals. **Sepals** spreading, free, oblanceolate, acute, 3-veined, the lateral veins branching from the base so as to appear 5-veined, margin entire; the **lateral sepals** oblique, with a minute dorsal keel. **Petals** spreading, free, oblanceolate, rounded, 1-veined, the vein branching from the base so as to appear 3-veined, apical margin slightly erose, spreading. **Lip** united to the column, 3-lobed, base cuneate; bicallose, the calli digitiform, parallel, short, with a central, thin, smooth keel running down to the apex of the midlobe; lateral lobes divaricate, oblong, rounded, slightly arching back, margin entire; midlobe with a narrow isthmus at the base, bilobed, apiculate, formed by two divaricate, oblong, rounded lobes, somewhat smaller than the lateral lobes, margin denticulate. **Column** slightly arching at the thin base, gradually dilated towards the apex. **Clinandrium hood** short, funnel-shaped, margin 4-lobed, the dorsal lobes rounded, the lateral ones acute. **Rostellum** apical, slit. **Anther** obovoid, 4-celled. **Pollinia** 4, bird-wing type, unequal, the inner pair smaller, laterally compressed, ancipitose. **Nectary** penetrating about 1/3 of the ovary, thin, not inflated, smooth.

OTHER SPECIMENS: VENEZUELA: Aragua: ca. de Ocumare de la Costa, ca. 20 m, [hort. Mérida, Yucatán, pressed] 10 II 2005, *Carnevali 7019*, CICY. (digital image of live flower, AMO!) **Amazonas:** Puerto Ayacucho, 8 XI 1953, *Maguire 36076*, K! NY! **Guárico:** San Juan de los Morros, cultivated in Caracas and Mexico City, *Campuzano sub Hágsater 13951*, AMO! (Illustration voucher.) **COLOMBIA:** Llanos Orientales, cultivated at Finca del Asombro, Monte de Sardi, Cali-Jomondi, 1000 m, pressed 1 IV 1986, *Villota sub Hágsater 7459*, AMO! **Boyacá:** Rio Tocaria, Einschnitt durch die erste Cordilleren Kette, 400 m 24 IV 1937, *Renz 3070*, RENZ! **Meta:** Hda. Santa María, San Pedro de Arimena, 13 I 1969, *P. Ortiz 168*, HPUJ! Loma Chichimena, Weg Villavicencio-San Martín, ca. 300 m, XI 1937, *Renz 3092*, RENZ!

OTHER RECORDS: COLOMBIA: Meta: Hda. Santa María, San Pedro de Arimena, 13 I 1969, *P. Ortiz 168*, illustration, HPUJ! xerox, AMO!

DISTRIBUTION AND ECOLOGY: Endemic to the Llanos Orientales, the Amazon basin of Colombia and Venezuela, from the foothills of the Cordillera Oriental in Colombia and the Cordillera Costanera in Venezuela, epiphytic, at 100-400 m altitude. Flowering from November to April.

RECOGNITION: *Epidendrum leeanum* belongs to the Psilanthemum Group which is recognized by the fusiform pseudobulbs, racemose to paniculate inflorescence usually arising from an abortive pseudobulb, attractive flowers with a 4-lobed lip, the lobes divaricate, oblong, the flowers yellowish dotted with reddish-purple. The species has short, thick stems, relatively small, crowded, pink flowers. It is very similar to *Epidendrum stamfordianum* Batem. which has taller plants with proportionately thinner pseudobulbs, and larger, yellow and white flowers, with reddish-purple dots but no pink hue.



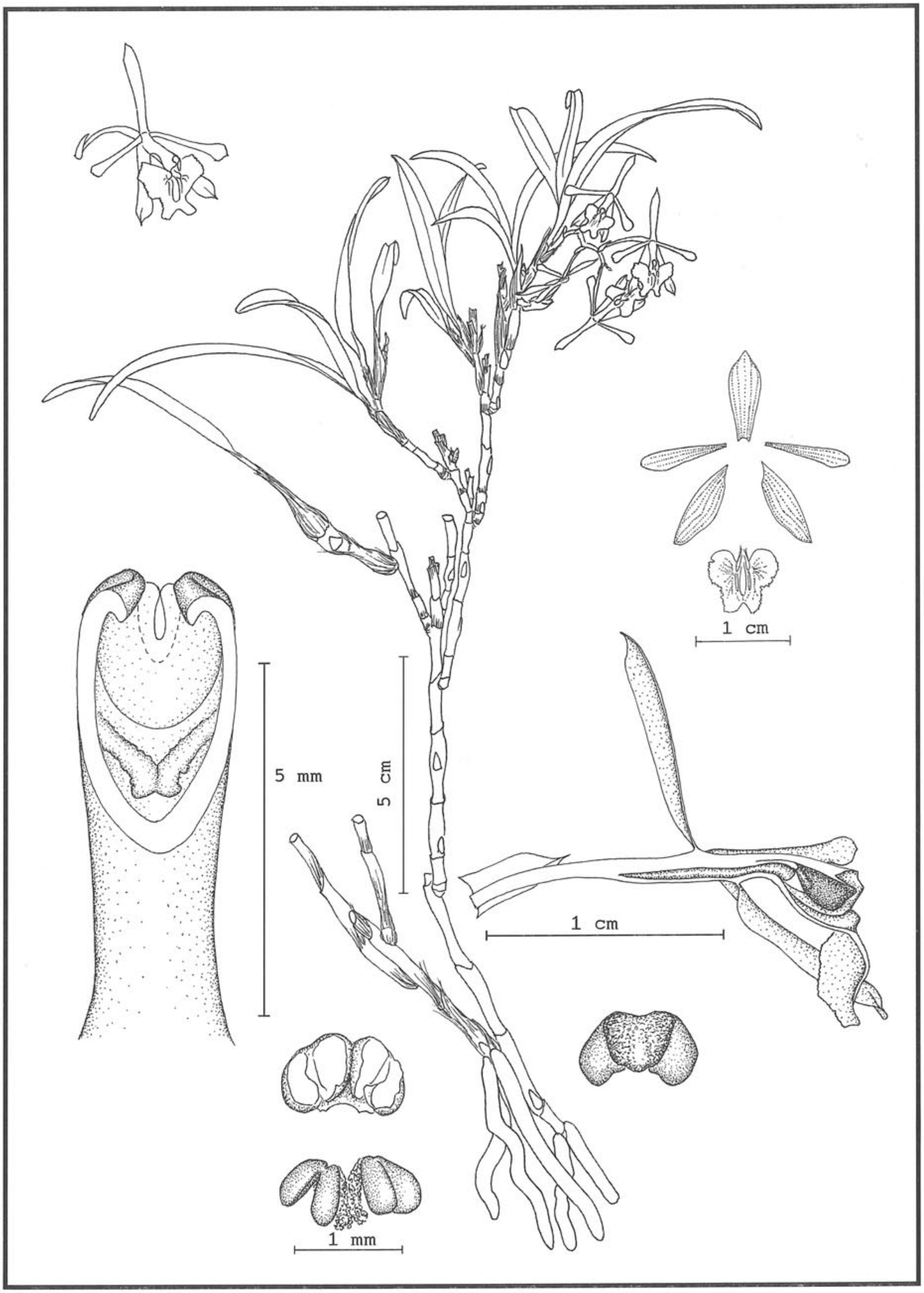
NOTE: The shape of the midlobe has been cited as differing in these two species, but it does not seem to be consistent, in the extreme, *E. leeanum* would have the apex deeply cleft, with *E. stamfordianum* more truncate and spreading.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: Dedicated to W. Lee, an orchid grower in England in the second half of the 19th Century.

REFERENCES: Misas, G., 2002. *Epidendrum stamfordianum*, **Orquideología** 22(2): 169-172.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM LIGNOSUM La Llave & Lex.

Plate 1138

EPIDENDRUM LIGNOSUM La Llave & Lex., Nov. Veg. Descr., Orch. opusc. 17. 1825.

Type: "Habitat, florestque simul cum ipso in montibus Vallisoletanis [Valladolid, today Morelia, Michoacán], supra arbores" [lost]. Neotype (here designated): MICHOACÁN: Zinapécuaro: km 197 carretera (autopista) Atlacomulco-Morelia, 2300 m, 28 may 1996, pressed 28 April 1997,,pu1.V7825sh.Ty; AMO 18590! Isoneotypes: AMES(ex AMO 19045)! UAMIZ! Clononeotype: pressed cult. 22 May 1997, AMO 18412!

Synonyms: *Epidendrum ledifolium* A. Rich. & Galeotti, Ann. Sci. Nat. sér. 3. 3: 21. 1845; Compt. Rend. Hebd. Séances Acad. Sci. 18: 512. 1844, nomen. Type: not indicated. Lectotype (designated by Hágsater, 1980a) México: Sierra de Oaxaca: Cuesta de San Juan, sur les chênes du terre froide, 7500 ft, May 1840,"D.Nrlsbiiu.tfqm , P! Isolectotypes: BR x4! G! K! [sketch of herb. Lindley 257, W 5857!] W 49970! Specimen, with watercolor illustration (arborescens, Cuesta de S. Juan y Sierra prope Oaxaca), by H. Galeotti t. 77, W 17134! Sketch of flower, probably by A. Richard, W 19623!

Epidendrum liparidoglossum L.O.Williams, Fieldiana Bot. 31: 416. 1968. Type: MEXICO: Estado de México, Cerro de Ahuacatitlán, Almoloya de Alquisiras, 1700 m, 29-30 marzo 1954 *E. Matuda 30583*. Holotype: F 1530348! Isotypes: AMES 110456! CODAGEM x3! MEXU x2! Photograph of holotype: AMES! MEXU! SEL!

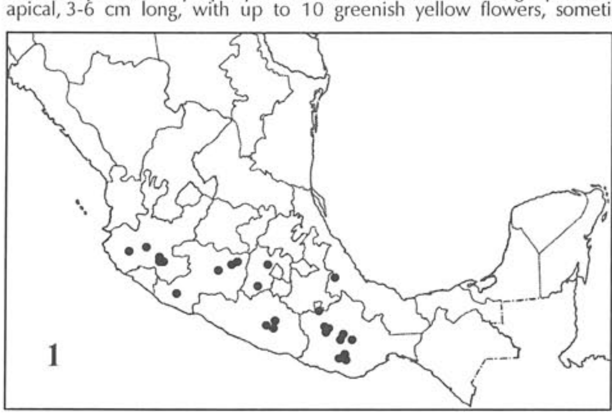
Hierba epífita o litófita, ererecta, arbustiva, simpodial, (los simpodios ascendentes, heteromodulares, los módulos distales disminuyendo marcadamente en tamaño en comparación con los basales) erecta, formando arbustos de ca. 30-40 cm de alto. **Raíces** sencillas, blanquecinas, muy carnosas, ocasionalmente aéreas, 1.5-6 mm de grosor. **Tallos** muy ramificados, las ramas generalmente producidas en los entrenudos distales, debajo de las hojas, teretes, delgados, algo sinuosos, desiguales en tamaño (los distales gradualmente más cortos), 1.5-21 x 0.1-0.45 cm; todos con vainas (no foliosas), tubulares, apresadas, papiráceas y fibrosas con el tiempo, 5-31 mm de largo. **Hojas** 2-3, agregadas hacia el ápice de los tallos, articuladas, dísticas; vainas tubulares, 4-7 mm de largo; lámina linear-elíptica, ápice redondeado a obtuso, carnosa, 1.3-8 x 0.3-0.9 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, generalmente de un tallo abortivo, muy corto, áfilo, en ocasiones de un tallo de crecimiento normal con hojas, florece una sola vez; racemosa, arqueada, pauciflora, corta, ca. 2.5 cm de largo; pedúnculo delgado, corto, 1.3 cm de largo; oculto en su totalidad hasta por 3 brácteas tubulares, papiráceas, 4-5 mm de largo; raquis filiforme, zig-zag. **Brácteas florales** más cortas que el ovario, linear-oblongas, agudas, abrazadoras, 4-8 mm de largo. **Ovario** filiforme, algo engrosado hacia el ápice, no ornamentado, 8-13 mm de largo. **Flores** 3-5, simultáneas, resupinadas, poco atractivas, amarillo verdoso a verde manzana, concoloras o marcadas de rojizo, el ápice de la columna y antera rojizo a morado, usualmente con aroma diurno a "ungüento medicinal". **Sépalos** extendidos, libres, agudos, con una quilla dorsal prominente, 5-nervados, los márgenes enteros, reflexos, 8-11 x 3-3.5 mm; el **dorsal** oblanceolado; los **laterales** elípticos, oblicuos. **Pétalos** extendidos, libres, angostamente oblanceolado-espatulados, obtusos a subagudos, 3-nervados, oblicuos, márgenes enteros, reflexo revolutos, 7-10 x 2.0-2.5 mm. **Labelo** unido basalmente a la columna, subentero a obscuramente trilobado, subovado-oblongo subcordiforme, base fuertemente cordada hendida, (por lo que se forman lóbulos poco definidos) el ápice hendido a obtuso, los margenes eroso-denticulados, 6.5 x 6-7.5 mm; bicalloso, los callos prominentes, laminares; disco provisto de 3 quillas delgadas, el par lateral más corto, la quilla central prolongándose hasta cerca del ápice de la lámina. **Columna** ligeramente arqueada, delgada, clavada, 6.5 mm de largo. **Clinandrio** reducido, con el margen entero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, comprimidos lateralmente; caudículas suaves y granulosas, casi del mismo largo que los polinios; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando ½ de la cavidad estigmática. **Nectario** penetrando el 1/3 apical del ovario, no inflado, liso. **Cápsula** elipsoide, pedicelo delgado 4 mm de largo, cuerpo 16-22 x 7.5-10.5 mm; cuello apical 3-4 mm de largo.

Epiphytic or lithophytic, symopodial, bush-like, erect **herb**, ca. 30-40 cm tall, the new stems produced from a mid internode of the previous stem, becoming markedly shorter distally. **Roots** simple, whitish, very fleshy, from the base of the plant, rarely aerial. **Stems** much branched, the branches generally produced from the distal internodes, below the leaves, terete, thin, somewhat sinuous, unequal in length, (the distal segments shorter); the non-foliar sheaths tubular, appressed, papiraceous and becoming fibrous with time. **Leaves** 2-3, aggregate towards the apex of the stems, articulate, distichous; sheaths tubular; blade coriaceous, linear-elliptic, apex rounded to obtuse. **Inflorescence** apical, usually from an abortive growth, short and leafless, sometimes the growth normal, leafy, racemose, arching, few-flowered, short, flowering only once; pedicel short, nearly totally hidden by 3 tubular, papiraceous bracts; rachis filiform, zigzag. **Floral bracts** much shorter than the ovary, linear-oblong, acute, amplexicaul. **Ovary** filiform, obconical, smooth. **Flowers** 3-5, simultaneous, resupinate, un-attractive, greenish yellow to apple green, concolor or marked with reddish, the apex of the column and anther reddish or purple; usually fragrant, of "medicinal ointment" during day-time. **Sepals** spreading, free, acute, with a prominent dorsal keel, 5-veined, margins entire, reflexed; dorsal sepals oblanceolate, the lateral sepals elliptic, oblique. **Petals** spreading, free, narrowly oblanceolate-spatulate, obtuse to subacute, 3-veined, oblique, margin entire, reflexed revolute. **Lip** basally united to the column, subentire to slightly 3-lobed, subovate oblong, subcordiform, base cordate, apex emarginate to obtuse, margin erose-dentate; bicallose, the calli prominent, laminar; disc provided with 3 thin keels, the lateral pair shorter, the mid-keel prolonged to near the apex of the blade. **Column** slightly arching, thin, dilated towards the apex. **Clinandrium-hood** reduced, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, nearly as long as the pollinia; viscidium semiliquid. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, not inflated, smooth. **Capsule** ellipsoid, with a thin, short pedicel, and a short apical neck.

OTHER SPECIMENS, OTHER SPECIMENS WITH DOUBTFULL LOCALITY AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic to Mexico, in the Sierra Madre del Sur and the Transverse Volcanic Belt. in Jalisco, Michoacán, México, Guerrero, Oaxaca, Puebla; a common epiphyte or rupiculous orchid in oak and pine-oak forests, from 1600 to 2700 m altitude. Flowering mainly from February to July.

RECOGNITION: *Epidendrum lignosum* belongs to the Propinquum Group which is characterized by the symopodial, bush-like habit with thin stems, subcoriaceous leaves, racemose, few-flowered inflorescence, and the mostly yellow or pale green flowers, sometimes marked or tinged with purple. The species is recognized by the relatively small plants, to 40 cm tall, with linear-elliptic, fleshy, apically rounded to obtuse leaves, lateral or apical, subessile inflorescences, with 3-5 greenish yellow to green flowers with the apex of the column purple or reddish. *Epidendrum propinquum* A. Rich. & Galeotti has larger plants, to 130 cm tall, narrowly elliptic, acute leaves, the inflorescence always apical, 3-6 cm long, with up to 10 greenish yellow flowers, sometimes tinged with purple. *Epidendrum skutchii* Ames, F.T.H ubb. & C.Schweinf. also has tall plants, to 120 cm, with linear-lanceolate, acute, grass-like leaves, and apical inflorescence 4.5-6 cm long, with radiating, fleshy-thickened veins on the disc of the lip.



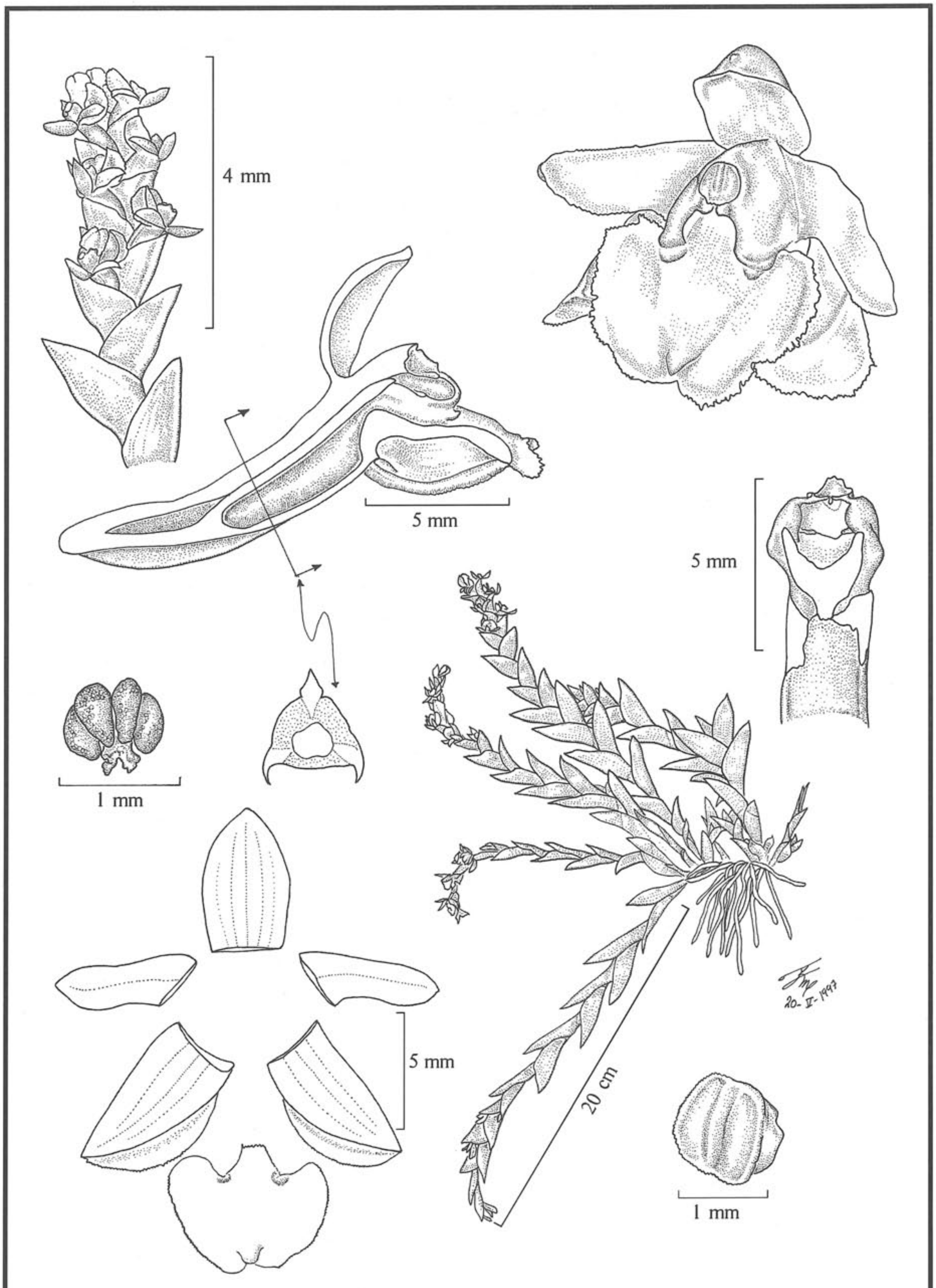
CONSERVATION STATUS: NT. Not threatened; widespread, forming large populations, rather strict habitat preferences, in cultivation requires seasonally dry conditions.

ETIMOLOGY: From the Latin *lignosus*, woody, in reference to the consistency of the stems.

REFERENCES: Ames, O., F.T.Hubbard and C.Schweinfurth. 1936. n5s.Ns8p1. [u ds 8dOpMu8i5s. &8uisd.Viris1. r8d. xuddH. áMsOu2r 115; Hágsater, E. 1980. *Epidendrum liparidoglossum* sinónimo con *E. ledifolium*. oO]p"dsr .(x scu2b.)uiIC 7(4): 385; Matuda, E., 1969, Orquídeas Nuevas de México Central,)r2i72sr1 14(3): 54-57, fig. 26; Hágsater, E., 1980, El Complejo *Epidendrum propinquum*, *lk c gq r n gsh r h* 7(4): 313-343; Salazar, G. A. 2006. oO]p"ds r 1. I. biOr1 [H8ir1. 8riuAr1.ds. Hl)rÁrdr . (Orchidaceae): 100. Instituto de Biología, UNAM, México City.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM LOCKHARTIOIDES Schltr.

Plate 1139

EPIDENDRUM LOCKHARTIOIDES Schltr., Fedde Repert. Sp. Nov. Beih. 19: 39. 1923.

Type: COSTA RICA: La Palma, im Jahre 1922, ***C. Werklé 112***. Holotype: B (destroyed). Photograph of type: AMES!

Hierba epífita, simpodial, cespitosa, 9-32 cm de alto. **Raíces** basales, carnosas, delgadas, 1-2 mm de grosor. **Tallos** sencillos, arqueado-colgantes, tipo caña, ligeramente sinuosos, ancipitosos, cubiertos totalmente por las vainas, 10-20 x 0.25-0.3 cm. **Hojas** 9-20, equitantes, monofaciadas, imbricadas, distribuidas a lo largo del tallo, carnosas; vaina tubular, muy corta, lateralmente comprimida, ancipitosa, 2-3 mm de largo; lámina ovado lanceolada a triangular, articulada, conduplicada en la base, lateralmente comprimida arriba, oblicuamente aguda, verde, margen entero, lisa, progresivamente reduciéndose hacia el ápice del tallo, 2-4 x 0.7-1 cm. **Bráctea Espatácea** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, racemosa, dística, arqueada, zigzag, sésil, 3-9 cm de largo; raquis lateralmente comprimido, ancipitoso, cubierto totalmente por las brácteas florales, no ornamentado; pedúnculo ausente. **Brácteas florales** de más largas que el ovario en las flores basales a más cortas que el ovario en las flores del ápice, semejantes a las hojas e indistinguibles de estas, agudas, 9-15 mm de largo. **Flores** 5-8, simultáneas, no resupinadas, secundas, verde manzana. **Ovario** grueso, triquetro, alado, liso, 7-11 mm de largo. **Sépalos** entreabiertos, libres, glabros, margen extendido; el **dorsal** elíptico a anchamente lanceolado, cóncavo, obtuso, con un pequeño mucrón en el ápice, 3-5 nervados; 5-7 x 3 mm; los **laterales** ovado-lanceolados, con una quilla dorsal muy prominente con el margen eroso, 3-nervados, 5-8 x 2-3 mm. **Pétalos** entreabiertos, libres, lanceolados a oblongos o linear oblongos, ligeramente constreñidos hacia la mitad, agudos, 1-nervados, margen diminutamente eroso, extendido, 4-7 x 1-2 mm. **Labelo** unido a la columna, reniforme, emarginado y mucronado, margen dentado eroso, 4-5 x 4-6 mm; bicalloso, callos en la base de la columna, pequeños, redondeados. **Columna** ligeramente arqueada, corta, gruesa, 3-5 mm de largo. **Clinandrio** corto, margen algo eroso. **Antera** subcuadrada, con una quilla roma al frente, 4-locular, diminutamente papilosa. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** subapical hendido. **Lóbulos laterales del estigma** pequeños, menos de ¼ del largo de la cavidad estigmática. **Nectario** penetrando la mitad del ovario, ensanchado detrás del perianto, liso. **Cápsula** elipsoide, casi sésil, triquetro, 20 mm de largo, 5.8 mm de ancho con un cuello de 4.3 mm de largo.

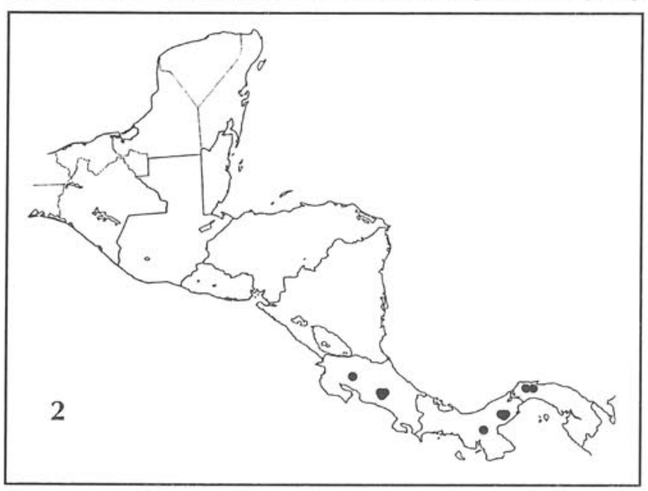
Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thin. **Stems** simple, arching-hanging, cane-like, slightly sinuous, ancipitose, completely covered by the sheats. **Leaves** 9-20, equitant, complanate, imbricating, distributed throughout the stem, fleshy; sheath tubular, very short, laterally compressed, ancipitose; blade ovate-lanceolate to triangular, articulate, basally conduplicate, laterally compressed above, obliquely acute, green, margin entire, smooth, progressively smaller towards the apex of the stem. **Inflorescence** apical, from the mature stem, flowering only once, racemose, distichous, arching, zigzag, sessile; rachis laterally compressed, ancipitose, totally covered by floral bracts. **Floral bracts** longer to shorter than the ovary, similar and indistinguishable from the leaves, acute. **Flowers** 5-8, simultaneous, non-resupinate, secund, apple-green. **Ovary** thick, triquetrous, winged, smooth. **Sepals** partly spreading, free, glabrous, margin entire, spreading; dorsal sepals elliptic to widely lanceolate, concave, obtuse, with a small apical mucro, 3-5-veined; the lateral sepals ovate-lanceolate, with a prominent dorsal keel, the margin of the keel erose, 3-veined. **Petals** partly spreading, free, lanceolate to oblong or linear-oblong, slightly constricted towards the middle, acute, 1-veined, margin minutely erose, spreading. **Lip** united to the column, reniform, emarginate, mucronate, margin erose-dentate; bicallose, calli basal, under the apex of the column, small, rounded. **Column** slightly arched, short, thick. **Clinandrium-hood** short, margin somewhat erose. **Anther** subquadrate, with a low, rounded keel, 4-celled, minutely papillose. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** subapical, slit. **Nectary** penetrating half the ovary, widened behind the perianth, smooth. **Capsule** ellipsoid, nearly sessile, triquetrous, with a short apical neck.

OTHER SPECIMENS: **COSTA RICA: Cartago:** Angostura, Turrialba, Atirro, *Endres s.n.*, W [36579]! Peralta, 200 ft, *Lankester 683*, AMES! Ibid., 683 m, *Lankester 787*, AMES! Ibid., 683 m, *Lankester 909*, AMES! Vicinity of Orosí, 30 III 1924, *Standley 39965*, AMES! US! Vicinity of Pejivalle, ca. 900 m, 7 II 1926, *Standley 47254*, AMES! Ibid., *Standley 47297*, US! AMES! Ibid., *Standley 47302*, AMES! US! Ibid., Lower Río Turrialba, 9 VI 1928, *Stork 2458*, AMES! MO! **PANAMA: Coclé:** N rim of El Valle de Antón, 600-1000 m, 12 II 1939, *Allen 1680*, AMES! MO! US! El Valle de Antón, ca, 800 m, 20 I 1941, *Allen 2296*, AMES! Ibid., 600 m, 26 XII 1946, *Allen 3925*, G! MO! on Río Coclé del Norte, 1500-2000 ft, 22 II 1961, *Dunn 19ª*, AMES! K! MO UC! trail from Cano Blanco del Norte to Continental divide N of El Copé, 400 m, 5 II1983, *Hamilton 23655*, MO! End of road near Rio Boqueron, road is 2 km N of cement plant on Colon Highway, ca. 3 km E of turnoff to end of road, 500 ft, 14-18 I 1978, *Hammel 924*, MO! trail from continental divide near the sawmill above El Copé to Río Blanco del Norte, 350-700, 20 II 1982, *Knapp 3647*, MO! Chirimi of El Valle de Antón, 2400 ft, 31 I 1936, *Purdem s.n.*, AMES! **Colón:** Along Río Boquerón, between Peluca hidrographic station and Quebrada Peluca, 70 m, 30 XII 1934, *Steyermark 17265*, AMES! Ibid., *Steyermark 17268*, MO! **Panamá:** Finca El Indio, region of Cerro Jefe, headwaters of Río Cascadas, 15 II 1971, *Dressler s.n.*, AMO! **Veraguas:** On rail road, track Santiago, 4 II 1923, *Lankester 440*, AMES! **COLOMBIA**: Hort. *James Folsom s.n.*, AMO! Hort. Colomborquídeas, prep.. mat. Cult. 10 VI 1997, *Hágsater 11628*, AMO! Ibid. pressed cult. 20 V 1997, AMO!(Illustration voucher).

OTHER RECORDS: COSTA RICA: Cartago: Angostura, Turrialba, *Endres s.n.*, illustration of flower, W!

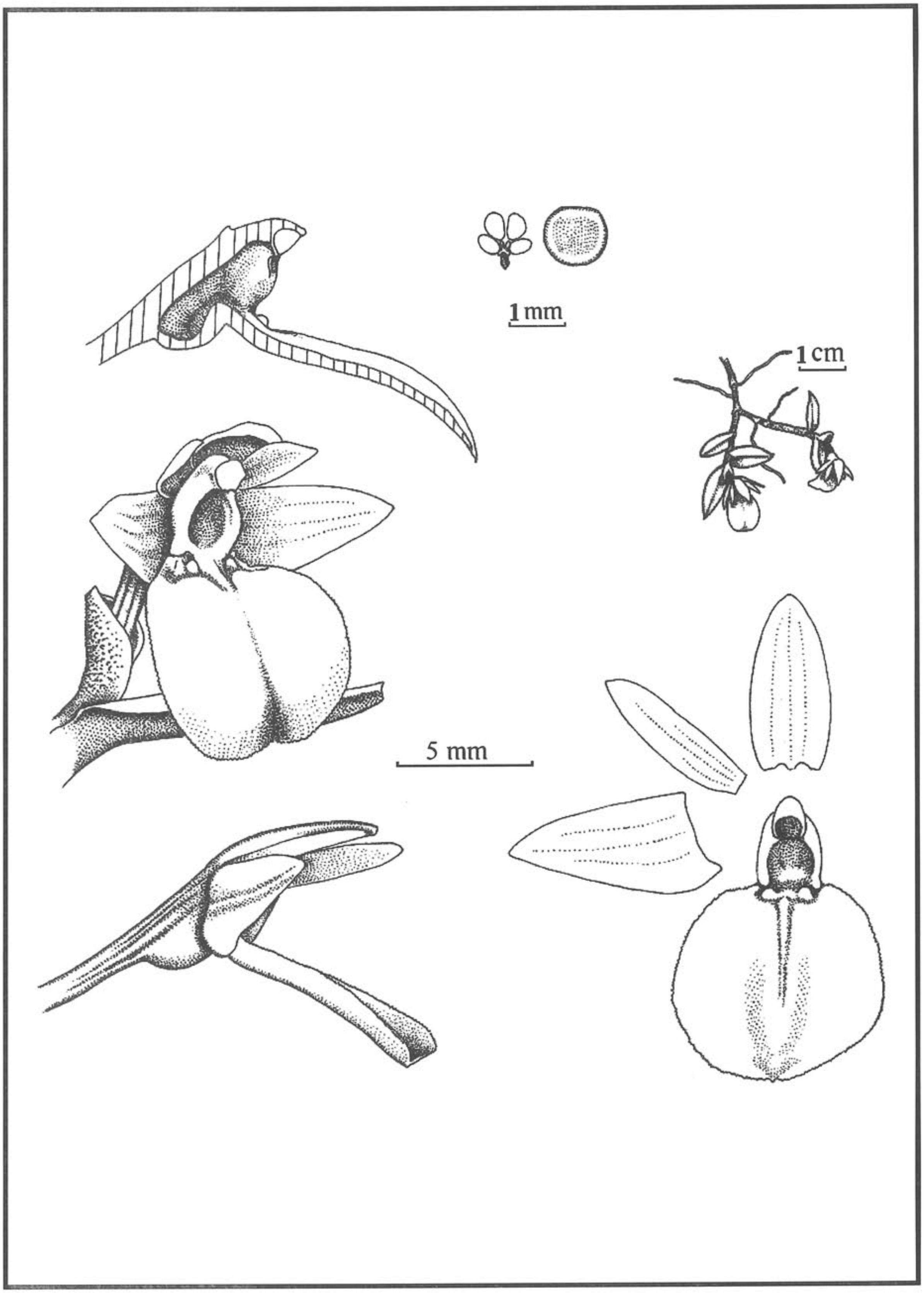
DISTRIBUTION AND ECOLOGY: Ranging from the Atlantic slope in central Costa Rica and Central Panama, in high rain forest at 60-1000 m altitude. Also registered from cultivated material from Colombia (Medellín). Flowering from December to June.

RECOGNITION: *Epidendrum lockhartioides* belongs to the Spathiger Group which is characterized by the sympodial growth, coriaceous leaves, simple, distichous inflorescence and flreshy flowers, and the Lockhartioides Subgroup which has complanate, imbricating leaves, reminiscent of the genus *Lockhartia*, the secund flowers with the floral bracts indistinguishable from the leaves. The species is recognized by 2-4 cm long leaves, and 5-8 mm long sepals. It is very similar to *Epidendrum aporum* Garay from Colombia and Ecuador which has longer, narrower leaves (4-5 cm long) and larger flowers, sepals 13-15 mm long, the narrowly lanceolate petals. *Epidendrum scalpelligerum* Rchb.f., from Cuba and Jamaica, has very short plants, 5-7 cm tall, smaller and fewer leaves, and an obovate lip.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the similarity of the plant habit to that ot the genus *Lockhartia*, the leaves complanate, triangular.



EPIDENDRUM MAXTHOMPSONIANUM Hágsater & Dalström

Plate 1140

EPIDENDRUM MAXTHOMPSONIANUM Hágsater et Dalström, *sp. nov.*

Type: PERU: without specific locality, purchased in Omaha, Nebraska, from the Peruvian nursery AgrOriente Viveros, of Moyobamba; flowered in cultivation by Max Thompson and Bryon Rinke, ***OIC 15098.***. Holotype: SEL! (Illustration voucher).

Epidendro gnomos Schltr. simile sed petalis oblongis latioribus, cum sepalo dorsali super columna cupulam formanti, labello orbiculari cum columna obliqua brevissime unito, discrepans.

Hierba epífita, rastrera, 2-3 cm de alto. **Raíces** escasas, a lo largo de la mitad basal de cada tallo, carnosas, delgadas, 0.5 mm de grosor. **Tallos** producidos de la mitad del tallo anterior, sencillos, tipo caña, teretes, rectos, ca. 20-25 x 1.5-2 mm. **Hojas** 2-4, distribuidas a todo lo largo de la mitad superior del tallo, alternas, articuladas; vaina tubular, lateralmente comprimida, lisa, 2-7 x 1.5-2 mm; lámina elíptico lanceolada, subaguda, diminutamente aristado, suculenta, lisa, verde, margen entero, desiguales en tamaño, la apical ligeramente más grande, 9-14 x 4-5 mm. **Bráctea espatácea** 1, ovada, ápice obtuso, conduplicada, dorsalmente papilosa, 4.5 x 3 mm (ancho de la bráctea al extenderse). **Inflorescencia** apical, del crecimiento maduro, florece una sola vez, uniflora, sésil. **Bráctea floral** muy pequeña, oculta dentro de la bráctea espatácea. **Ovario** terete, inflado ventralmente en el ápice, formando una vesícula prominente y globosa detrás del perianto, lisa, 8 mm de largo. **Flor** solitaria, resupinada, coloración verde amarillento, con el labelo rojo vino, los callos y la columna verde amarillento, antera blanca. **Sépalos** entreabiertos, libres, membranáceos, glabros, 3-nervados, margen entero, extendido, 6.5 x 3.1-3.6 mm; el **dorsal** ovado, redondeado; los **laterales** ovado triangulares, oblicuos, agudos. **Pétalos** entreabiertos, libre, oblongos, ápice obtuso, 3-nervados, membranáceos, margen entero, extendido, 6.25 x 1.5 mm. **Labelo** muy cortamente unido a la columna, orbicular, ápice redondeado, todo el margen diminutamente dentado, plano en posición natural, 7.3 x 7.8 mm; bicalloso, los callos semiglobosos, frente a la inserción de la columna, con una quilla intermedia baja, roma, corta. **Columna** dorsalmente arqueada, oblicua, gruesa, ventralmente formando una apertura amplia, 3.1 mm de largo incluyendo el clinandrio, 3.9 x 2.4 mm. **Clinandrio** cumulado, reducido, margen entero. **Rostelo** apical, hendido. **Nectario** amplio, penetrando un poco menos de la mitad del ovario, inflado, liso interiormente. **Antera** esférica, 4 locular. **Polinios** 4, ovoideos, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más cortas que los polinios; viscidio semilíquido, transparente. **Cápsula** no vista.

Epiphytic, creeping **herb**. **Roots** scarce, along the basal half of each stem, fleshy, thin. **Stems** produced from the middle of the previous stem, simple, cane-like, terete, straight. **Leaves** alternate, 2-4, distributed throughout the apical half of the stem, sheath tubular, laterally compressed, smooth; blade articulate, lanceolate, succulent, smooth, green, apex cuspidate, margin entire, unequal, the apical leaf somewhat larger. **Inflorescence** apical, from mature growth, flowering only once, sessile. **Spathaceous bract,** single, ovate, conduplicate, apex obtuse, dorsally papillose. **Flower** semi-oblong, conduplicate solitary, resupinate, yellowish green, lip wine-red, calli and column yellowish green, anther white. **Floral bract** very small, hidden by the spathaceous bract. **Ovary** inflated, forming a prominent, globose vesicle behind the perianth; basal section circular, smooth. **Sepals** partly spreading, free, membranaceous, glabrous, margins entire, extended, 3-veined, dorsal sepal ovate, apex rounded, lateral sepals ovate-triangular, oblique, acute. **Petals** spreading, narrowly oblong, obtuse, membranaceous, 3-veined, margin entire, spreading. **Lip** united very shortly to the column, orbicular, apex rounded, all margins minutely dentate, flat in natural position; bicallose, calli semi-globose, in front the of the column, with a low, rounded, short keel in the middle. **Column** oblique thick, short, dorsally arching, ventrally forming a wide opening. **Clinandrium hood** cucullate, somewhat surpassing the body of the column, entire. **Rostellum** apical, slit. **Nectary** ample, penetrating little less than the middle of the ovary, smooth inside. **Anther** spherical, 4-celled. **Pollinia** 4, ovoid, laterally compressed, subequal; caudicles soft and granular, shorter than the pollinia; viscidium semi-liquid, transparent.

OTHER SPECIMENS: None seen.

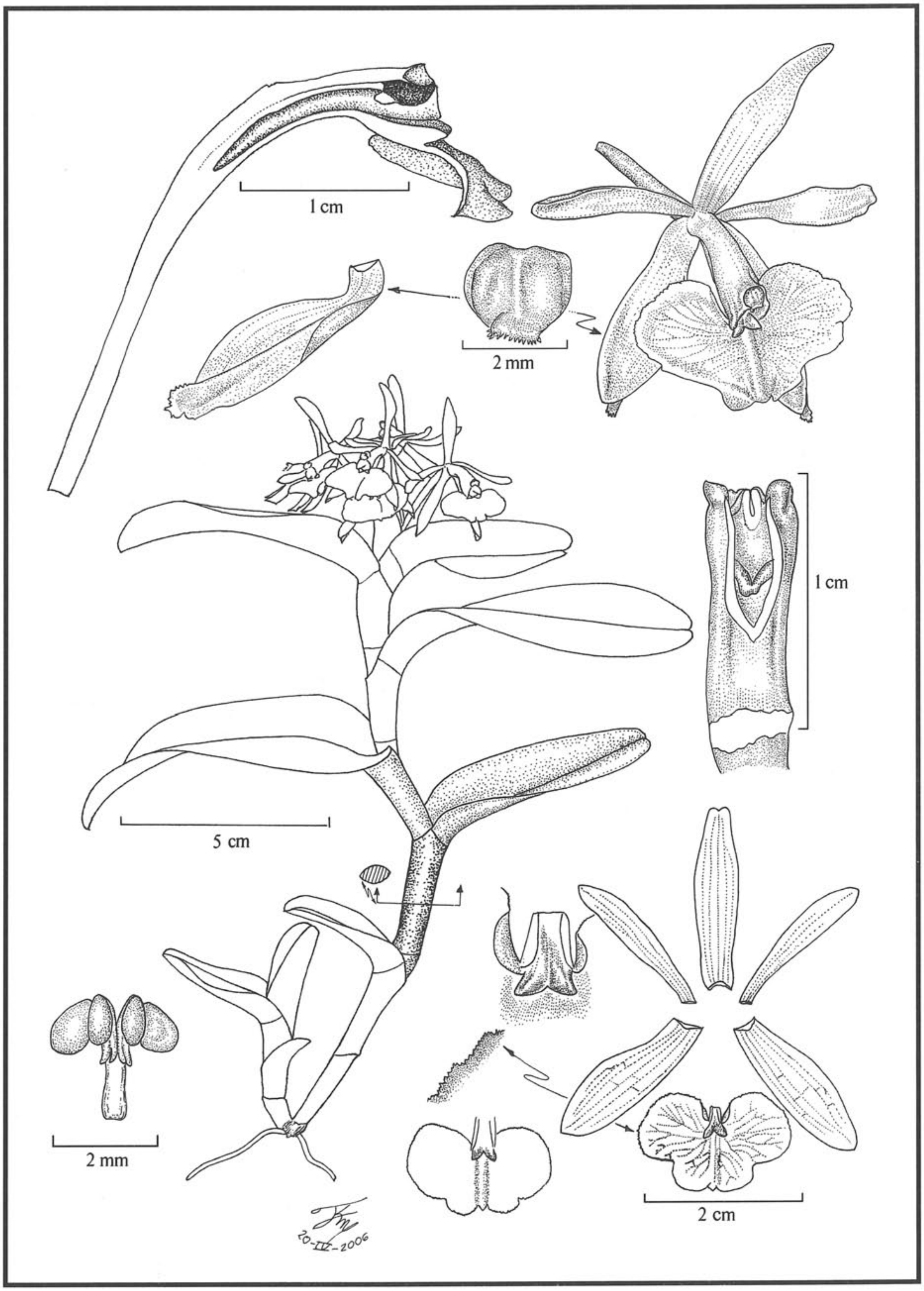


DISTRIBUTION AND ECOLOGY: Nothing is known about the natural environment or distribution.

RECOGNITION: *Epidendrum maxthompsonianum* belongs to the Porpax Group, which is characterized by the small, creeping plants with succulent leaves, single flowers from a small spathaceous bract, mostly green with a usually shiny wine-red lip. The species is recognized by the oblique column, the oblong, relatively wide petals, forming a cucullate hood with the dorsal sepals over the column, in natural position, the lip is orbicular. *Epidendrum gnomus* Schltr. has narrowly triangular, nearly linear petals, outstretched in natural position, and the lip is ovate, somewhat cordate at the base. *Epidendrum viridibrunneum* Rchb.f. has linear, free petals, with the lip elliptic, the base somewhat cuneate, and elongate calli. *Epidendrum mathewsii*, which also grows in the region has larger plants but similar sized flowers, with the lip reniform, convex, 3-keeled with entire margins, and the nectary is elongate and does not form a globose vesicle on the underside of the ovary.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: Named in honor of Max C. Thompson, who started raising orchids in 1975 and has received over 200 AOS (American Orchid Society) awards over the years. He is an active AOS orchid judge and has been a trustee of the AOS for the past seven years. He is also the Chairman of the Great Plains Judging Center.



EPIDENDRUM MELISTAGOIDES Hágsater & L.Sánchez

Plate 1141

EPIDENDRUM MELISTAGOIDES Hágsater et L.Sánchez, *sp. nov.*

Type: MEXICO: Chiapas: Cintalapa-Arriaga, carr. 195, km 56, 4500 ft., col. Beatrice & William R. Thurston T-1322, 18 II 1977, hort. Mexico City, pressed cult. 23 XI 1977, ***Hágsater 5047.*** Holotype: AMO! (Illustration voucher.) Isotype: ENCB! Clonotypes: pressed cult. 2 X 1983, AMO! CAS! ENCB! US! pressed cult. 16 X 1984, F! MEXU! MO! P!

Epidendro melistago Hágsater simile sed labello trilobato, suis lobulis lateralibus margine dentatis, callo sub formam suggesti ad basim prominentis, ad apicem duos callos triangulares acutos divisi, abhorrens.

Hierba epífita, simpodial, cespitosa, 11-33 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, delgadas, 1-2.5 mm de grosor. **Tallos** sencillos, tipo caña, algo lateralmente comprimidos, ligeramente flexuosos, 7-29 x 0.3-0.5 cm. **Hojas** 5-12, distribuidas a lo largo del tallo, vaina foliar algo lateralmente comprimida, lisa, 1.5-3 cm de largo; lámina ovada elíptica, coriácea, lisa, ápice retuso a asimétricamente bilobado, margen extendido, entero, con una quilla dorsal roma, verde claro a obscuro, 2.5-9.5 x 1.5-2.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo maduro, subumbelada, densa, pedúnculo inconspicuo. **Bráctea floral** de la mitad a un tercio ó menos del largo del ovario, obovada, ápice agudo, conduplicada, 6-15 x 3-6 mm. **Flores** (5)10-30, simultáneas, resupinadas, concoloras, verde brillante, fragancia fuerte, especialmente nocturna, desagradable, rancio a zapato sudado, diurna dulce, de fruta tropical pasada de madura. **Ovario** terete, no inflado, no ornamentado, 15-27 x 1.0-1.5 mm. **Sépalos** extendidos, libres, elípticos, ápice obtuso a raramente retuso, glabros, coriáceos, 5-nervados, margen entero, revoluto, 14.0-21.5 x 3.8-5.5 mm; los **laterales** ligeramente oblicuos, ápice obtusos, quilla dorsal apical prominente e irregularmente dentada, 4.5-6.5 mm de ancho. **Pétalos** extendidos, angostamente lanceolados, ápice obtuso a redondeado, membranáceos, 3-nervados, margen entero, revoluto, 13.8-14.0 x 2.0-2.5 mm. **Labelo** unido a la columna, trilobado, base cordada, margen dentado, ápice emarginado, apiculado, revoluto en posición natural, 8-12 x 12.5-18.5 mm; callos como una plataforma prominente en la base, la cual se divide en el ápice formando dos callos divergentes, triangulares, agudos, disco con una gota de néctar frente al callo en flores recién abiertas, engrosado hacia el centro formando una carina muy baja; lóbulos laterales ovado elípticos, margen diminutamente dentado, 4.5-6.0 x 6-9 mm; lóbulo medio transversalmente rectangular, mucronado a hendido en el ápice, formando dos lóbulos suborbiculares cortos, 2.5-3.5 x 5.5-9.0 mm. **Columna** recta, 8-12 x 1.2-2.0 mm de largo. **Clinandrio** reducido, entero. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, subiguales, lateralmente comprimidos; caudículas suaves y granulosas, ligeramente más largas que los polinios; viscidio viscoso, translúcido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** cortos, de un tercio del largo de la cavidad estigmática. **Nectario** corto, penetrando un cuarto del ovario, no ornamentado. **Cápsula** no vista.

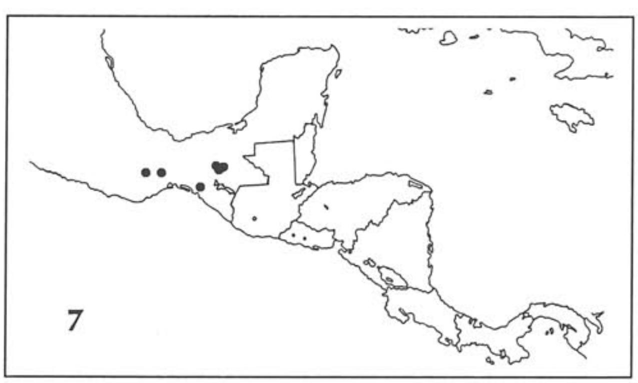
Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, somewhat laterally compressed, slightly flexuous. **Leaves** 5-12, distributed throughout the stem; foliar sheath somewhat laterally compressed, smooth; blade ovate-elliptic, coriaceous, apex retuse to unequally bilobed, margin spreading, entire, with a low, rounded dorsal keel; light to dark green. **Inflorescence** apical, from the mature stem, subumbellate, dense, peduncle inconspicuous. **Floral bract** up to ½ the length of the ovary, obovate, acute, conduplicate. **Flowers** (5)10-30, simultaneous, resupinate, concolor, bright green, fragrance strong, especially at night, disagreeable, rancid, of sweaty shoe, morning fragrance sweet, of over-ripened tropical fruit. **Ovary** terete, not inflated, smooth. **Sepals** partly spreading, free, elliptic, apex obtuse to rarely retuse, glabrous, coriaceous, 5-veined, margin entire, revolute; the lateral sepals slightly oblique, apex obtuse, dorsal keel prominent and dentate. **Petals** spreading, narrowly lanceolate, apex obtuse to rounded, membranaceous, 3-veined, margin entire, revolute. **Lip** united to the column, 3-lobed, base cordate, margin dentate, apex emarginate, apiculate, revolute in natural position; calli from a prominent platform at the base, then divided and forming two divergent, triangular, acute calli; disc with a drop of nectar in front of the calli in fesh flowers, thickened into a very low keel; lateral lobes ovate-elliptic, margin minutely dentate; midlobe transversely rectangular, apex emarginate and mucronate, forming two short, semiorbicular lobes. **Column** straight. **Clinandrium hood** reduced, entire. **Anther** subsphaerical, 4-celled. **Pollinia** 4, obovoid, subequal, laterally compressed; caudicles soft and granulose, slightly longer than the pollinia; viscidium viscous, translucent. **Rostellum** apical, slit. **Nectary** short, penetrating 1/4th of the ovary, smooth.

OTHER SPECIMENS: MEXICO: Oaxaca: Oaxaca, 2000-4000 ft., *Galeotti 5290,* BR x2! G x4! L! P x3! W! Juquila Mixes, camino de terracería Ayutla-Ocotepec, aprox. 5 km después de Juquila Mixes, aprox. 30 km después de Ayutla rumbo a Juquila Mexes, 1520 m, 3 IV 1996, *Jiménez 1724,* AMO! ca. 16 Km de Santiago Ixtlaltepec hacia Santa Maria Chimalapa, entrando por la carretera transistmica por El Mezquite, 370 m, col. 7 IX 1988, pressed cult. 30 III 1989, *Salazar 4044,* AMO! MEXU! Ibid. pressed cult. 21 II 1991, AMO! Ibid. pressed cult. 4 II 1993, AMO! **Tabasco-Chiapas:** Without locality, pressed cult. 25 II 1983, *Hágsater 6635,* AMO! Ibid. pressed cult. 21 XI 1984, AMO! **Chiapas:** Ocosingo, 6-8 km N of Ocosingo along road to Bachajon, 900 m, 24 IX 1972, *Breedlove 27934,* CAS! La Independencia, above and SW of La Soledad on road to Las Margaritas, 1525 m, 29 IX 1981, *Breedlove 53090,* CAS! Finca Prusia, 1100 m, 22 X 1997, *Castillo 1477,* AMO! Cintalapa, 17 Km sobre el camino Cintalapa-Triunfo de Madero, 790 m, 13 I 1988, *Flores 564,* AMO! Ibid. *565,*UAMIZ! Jaltenango/Mapastepec, Reserva El Triunfo, Poligono 1, El Tomatal-Barranca Honda, 1250 m, *Heath 1165,* AMO! UAMIZ! Ocosingo, a 6 km sobre el camino a las ruinas de Toniná, col. 29 III 1991, pressed cult. 9 X 1992, *Pérez 39,* (AMO x2!, flowers in spirit) Ibid. pressed cult. 1 XI 1992, AMO x2! Ocosingo, desviación a Ocosingo de San Cristóbal, km 4.3, 2350 m, col. 10 VII 1991, pressed cult. 8 X 1993, *Pérez 252,* AMO! Ocosingo, 6 Km de la desviación a las Ruinas de Toniná, pressed cult. 4 XI 1991, *Sánchez 275,* AMO! Ibid. pressed cult. 15 XI 1991, AMO! Ibid. pressed cult. 19 VIII 1992, AMO x2! Ibid. pressed cult. 4 I 1993, AMO! Cerca del Km 16, camino Berriozabal-El Cairo, ca. 1050 m, col. 17 IV 1989, pressed cult. 8 II 1990, Soto *5324,* AMO! Ibid. pressed cult. 1 XI 1990, (AMO x2! Flowers in spirit) Ca. 15.8 km al E de Ocosingo, por el camino a Monte Líbano, 7 VIII 1992, *Soto 6816,* AMO!

DISTRIBUTION AND ECOLOGY: Endemic to Mexico, in the states of Oaxaca and Chiapas; epiphytic in high jungle and oak forests, 370-2350m altitude. Flowering from October to March.

RECOGNITION: *Epidendrum melistagoides* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green rarely white flowers. The species can be recognized by the somewhat laterally compressed stems, (5)10-30 simultaneous, green, flowers with a nocturnal, intense, rancid fragrance, reiminiscent of sweaty shoes, diurnal of over-ripened tropical fruit, lip 3-lobed, lateral lobes ovate-elliptic, margin minutely dentate, midlobe transversely rectangular, apex mucronate to emarginate, rarely forming two semiorbicular lobes, calli formed from a prominent, basal platform, divided at the apex to form two divergent, triangular, acute calli; disc of the lip with a drop of nectar in front of the calli. Similar to *Epidendrum melistagum* Hágsater which has both the same drop of nectar and fragrances, but is distinguished by the reniform lip with the margins erose-crenulate, and a single platform-like callus. *Epidendrum chlorocorymbos* Schltr. has terete stems, the lateral lobes of the lip with an entire margin, completely separate subglobose calli, and the disc of the lip without any nectar; the flowers are fragrant of freshly leavened bread.

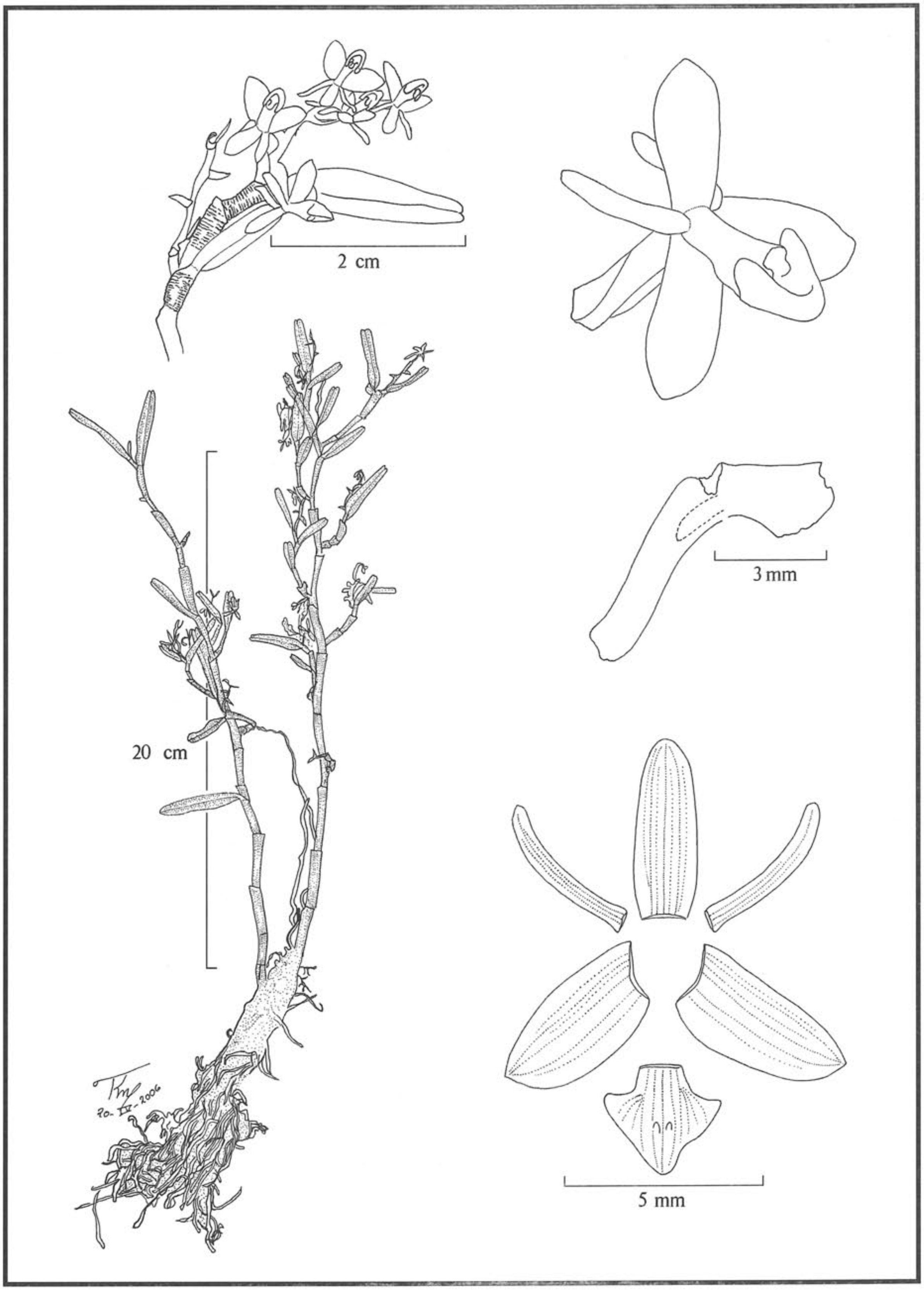
NOTE: Mark Whitten (unpublished data) has provided the following data for *E. melistagum,* [*Hágsater 9333*, Río Pescados, Veracruz] the morning fragrance, sweet at sunup, mainly composed of methyl benzoate, methyl salicylate, benzaldehyde and linalool. In the afternoon and evening the fragrance is very intense and disagreeable, of sweaty shoe, rancid, typical of flowers pollinated by moths (Hágsater 1989, Hágsater & Soto, 2005). This species appears to have a similar fragrance, but chemical data are not available.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek μελι, honey, σταγον a drop, and the suffix -οιδες, which indicates resemblance, in reference to the similarity of this species to *E. melistagum.*

REFERENCES: Hamer F. 1979. **Las Orquídeas de El Salvador 1**: 204-205. Hágsater, E. 1989. *Epidendra novae et criticae* 4: Nuevas especies del complejo *Epidendrum difforme* de México y Centroamérica. **Orquídea (Mexico City)** 11: 23-50. Hágsater, E. 1990. *Epidendrum melistagum* Hágsater. Orchids of Mexico, **Icon. Orchid. (Meixco) I**, pl. 35. García-Cruz, J. & L. Sánchez. 1999. Orchidaceae II. *Epidendrum*. **Flora de Veracruz**, 112:57-60. Hágsater, E. & M. A. Soto, 2005. *Epidendrum*, in Pridgeon, A. M., P. J. Cribb, M. W. Chase, and F. N. Rasmussen (eds.). **Genera Orchidacearum**, 4, Epidendroideae (Part One): 236-251.



EPIDENDRUM MICROCARDIUM Schltr.

Plate 1142

EPIDENDRUM MICROCARDIUM Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 39. 1923.

Type: COSTA RICA: Tablazo, 1921, ***C. Wercklé 111.*** Holotype: B (destroyed). Isotype: AMES 39893!

Synonym: *Epidendrum sanchoi* Ames var. *exasperatum* Ames & C.Schweinf., Sched. Orchid. 10: 1930. Type: COSTA RICA: Heredia: Cerro de las Lajas, North of San Isidro, 2000-2400 m, March 7, 1926. ***Paul C. Standley & Juvenal Valerio 51488.*** Holotype: AMES 33597! (Illustration voucher) US 139768!

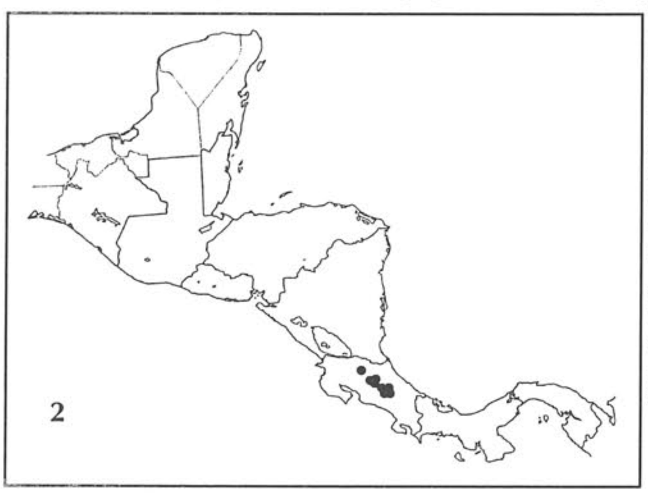
Hierba epífitas, monopodial, ramificada, 20-50 cm de alto. **Raíces** basales, filiformes, 0.5-0.8 mm de grosor. **Tallos** ramificados, tipo caña, teretes, cubiertos por vainas verrugosas, el principal 30-45 x 0.17-0.25 cm, las ramas más cortas, 3-10 x 0.07-0.1 cm. **Hojas** ca. 12 en el tallo principal, distribuidas a todo lo largo del tallo, 2-3 en las ramas, agregadas hacia la mitad apical; vainas tubulares, rugosas, 0.4-2 cm de largo; lámina angostamente oblongo elípticas, desigualmente bilobadas, 1.5-5 x 0.2-0.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical de los tallos principal y de las ramas, racemosa, dística, secundiflora, recta, subsésil; pedúnculo corto, 2.5-3 mm de largo. **Brácteas florales** más cortas que el ovario, triangular oblongas, agudas, 2-2.5 mm de largo. **Flores** (3) 5-10, simultáneas, dísticas, secundas, no resupinadas, el labelo siempre orientado hacia la raquis, blanco verdosas a verde pálido con el ápice de la columna púrpura, fragancia no registrada. **Ovario** no inflado, terete, no ornamentado, 3-3.5 mm de largo. **Sépalos** extendidos, libres, oblongo lanceolados, agudos, 3-nervados, glabros, margen entero, algo revoluto, 3-5.5 x 1-3 mm, los laterales oblicuos. **Pétalos** extendidos, libres, linear lanceolados, agudos, 3-nervados, glabros, margen entero, extendido, 3-5 x 0.5-1.2 mm. **Labelo** unido a la columna, cóncavo en posición natural, ovado cordado, obtuso, 2-3 x 2-2.8 mm; ecalloso. **Columna** recta, el ápice dilatado, 1.7-2.8 mm de largo. **Clinandrio** reducido, entero. **Antera** no vista. **Polinios** no vistos. **Lóbulos laterales del estigma** no vista. **Nectario** corto, penetrando alrededor de 1/3 del ovario. **Cápsula** no vista.

Epiphytic, monopodial, branching **herb. Roots** basal, filiform. **Stems** branching, cane-like, terete, covered by verrucose sheaths, the main stem longer than the branches. **Leaves** about 12 distributed throughout the main stem, 2-3 aggregate towards the apical half of the branches; sheaths tubular, rugose; blade narrowly oblong-elliptic, unequally bilobed. **Inflorescence** apical, from the main stem and the branches, racemose, distichous and secund, straight; subsessile, peduncle short. **Floral bracts** shorter than the ovary, triangular-oblong, acute. **Flowers** (3) 5-10, simultaneous, non-resupinate, secund, the lip always towards the rachis, greenish white to pale green with the apex of the column purple. **Ovary** not inflated, terete, smooth. **Sepals** spreading, free, oblong-lanceolate, acute, 3-veined, glabrous, margin entire, somewhat revolute; the lateral sepals oblique. **Petals** spreading, free, linear-lanceolate, acute, 3-veined, glabrous, margin entire, spreading. **Lip** united to the column, concave in natural position, ovate-cordate, obtuse; ecallose. **Column** straight, widened towards thė apex. **Clinandrium-hood** reduced, entire. **Nectary** short, penetrating about 1/3 of the ovary.

OTHER SPECIMENS: COSTA RICA: Without locality, 1 X 1960, *Lankester s.n.*, AMO! SEL! Ibid. *Lankester 84*, flowers in spirit AMO! Hills SW of San Jose, 1 XI 1960, *Lankester 1776*, F! SEL! (Illustration, flowers in spirit AMO!) **Alajuela:** Quebrada Desengaño, 1 Km E of Vara Blanca, 1860 m, 8 VIII 1971, *Lent 2058*, F! Vara Blanca, 2000 m, 25 XII 1931, *Mansfeld 239*, M! Palmira, 6200 ft. [1897 m], 2 III 1938, *Smith 213*, AMES! F! Ibid. 6000 ft. [1836 m], *Smith 284*, F! Ibid. 2200 m, *Smith 375*, AMES! SEL! Palmira de Zarcero, 1 IX 1937, *Smith H 284*, F! Ibid. 2200 m, 18 III 1938, *Smith 502*, AMES! K! Ibid. *Smith 503*, AMES! Palmira, 2200 m, 9 V 1938, *Smith 530*, AMES x2! F! NY! SEL! Ibid. 2050 m, 27 V 1938, *Smith 671*, AMES! K Ibid. 2300 m, 16 VII 1938, *Smith 934*, AMES! Ibid. 2200 m, 14 IX 1938, *Smith 1193*, AMES! NY! Viento fresco, 1600-1900 m, 13 II 1926, *Standley 47726*, AMES! US! Poasito, 2000 m, 12 IX 1979, *Todzia 698*, CR! **Heredia:** Los Angeles de Heredia, I 1912, *Brenes, s.n.*, NY! Yerba Buena, northeast of San Isidro, ca. 2000 m, 22 II 1926, *Standley 49102*, AMES! US! Ibid. *Standley 50127*, AMES! US! Cerros de Zurqui, northeast of San Isidro, 2000-2400 m, 3 III 1926, *Standley 50685*, AMES! US! Ibid. *Standley 50722*, AMES! Ibid. *Standley 50765*, AMES! US! Ibid. *Standley 50733*, AMES! US! Cerro de Las lajas, north of San Isidro, 2000-2400 m, 7 III 1926, *Standley 51535*, AMES! US! Cerro de Las Caricias, north of San Isidro, 2000-2400 m, 11 III 1926, *Standley 52326*, AMES! US! Ibid. *Standley 52394*, AMES! US! Border of San José and Heredia provinces; ridge between the E and W forks of the upper Rio Pará Blanco, 30 III 1974, *Utlay 735*, F! **San Jose:** Cordillera de Talamanca. Reserva Privada Cerros de Escazu. Finca El Cedral, 2200 m, 8 VIII 1996, *Escalante 1106*, F! USJ! Between Aserri and Tarbaca, 1600-1900 m, 17 II 1924, Standley 34178, AMES! **Cartago:** Tablazo, 1900 m, 1 VIII 1908, *Brade 1116*, AMES!

DSITRIBUTION AND ECOLOGY: Known only from Costa Rica, from the Cordillera Central, de Tilarán. And the western end of the Cordillera de Talamanca; epiphyte in rain and cloud forest, at 1600-2400 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum microcardium* Schltr. belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Rugosum Subgroup which has branching habit with few-flowered inflorescences from short, secondary stems, the leaf-sheaths rugose. The species is recognized by the numerous, (3) 5-10, secund, small (sepals 3.5-5.5 mm long), greenish white to pale green flowers, with the apex of the column purple, the ovate, cordate, ecallose lip with the margin much thickened. It is similar to *Epidendrum sanchoi* Ames which has 1-5 (generally 3), greenish, concolor flowers, sepals 4.8-8 mm long, the lip triangular, acuminate, the base cordate with the angles rounded, tridentate callus, the central tooth longer. *Epidendrum platystomum* Hágsater & L.Sánchez and *Epidendrum platysomoides* Hágsater & L.Sánchez, both have small white flowers (sepals 2.5-3.1 mm long), the column with a tall, narrow aperture formed by the prominent, laminar wings of the column which form a funnel.

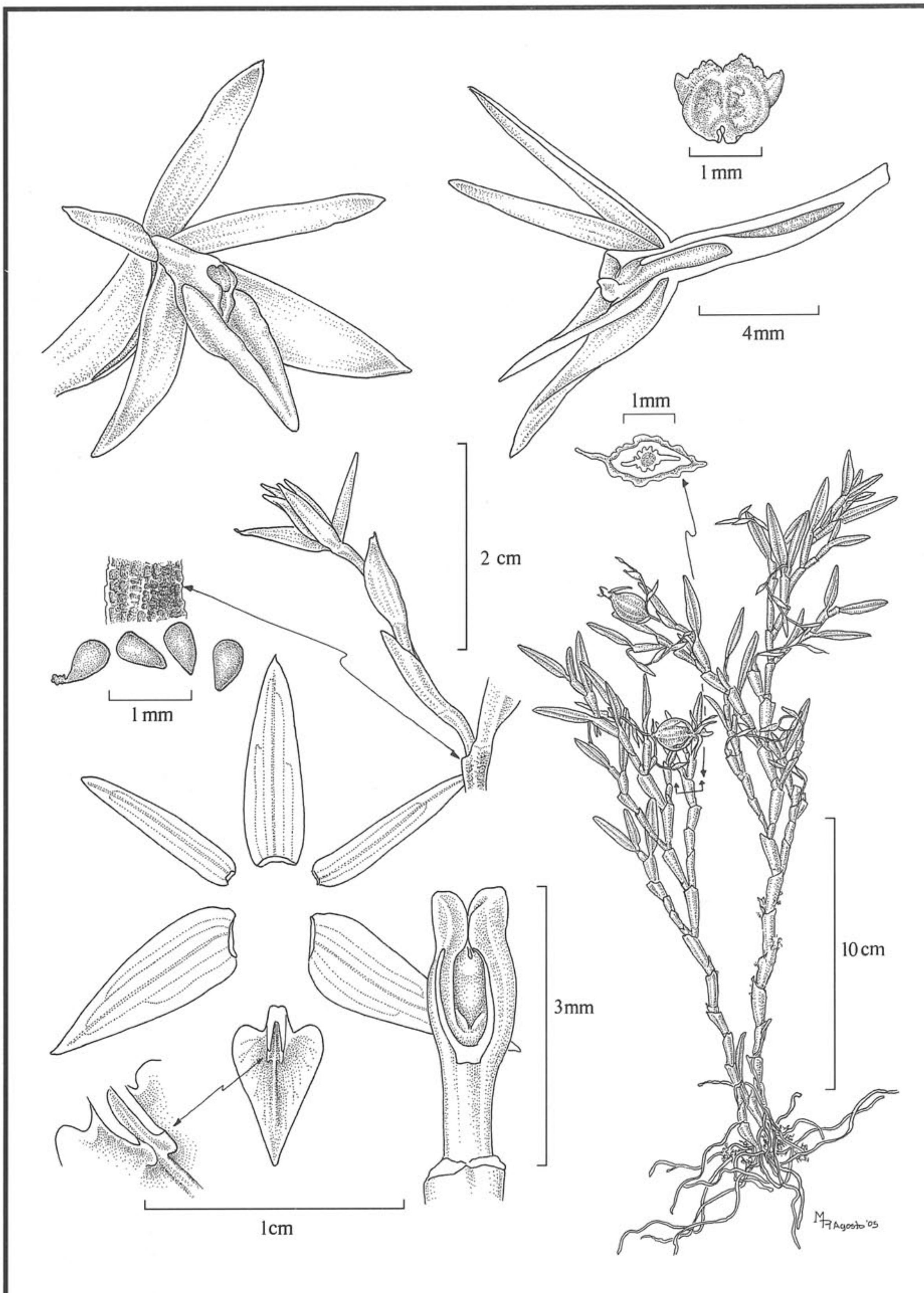


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek μικρος, small, and καρδια, heart, in reference to the small heart-shaped lip of this species.

REFERENCES: Hammel et al., 2003, **Manual de Plantas de Costa Rica**, Vol. III, Missouri Botanical Garden, p. 141.

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Herbario AMO   México, D.F., MÉXICO



EPIDENDRUM MICRODENDRON Rchb.f. **Plate 1143**

EPIDENDRUM MICRODENDRON Rchb.f., Beitr. Orchid.-K. Centr. Amer. 84. 1866.

Type: COSTA RICA: [Alajuela:] Vulcan Barva, 27 X 1866, ***Wendland 1048.*** Holotype: W 4181! Isotype: Illustration AMES!

Synonym: *Epidendrum fundii* Ames, Schedul. Orchid. 9: 50. 1925. Type: Costa Rica: [Cartago:] Southern slopes of Volcan de Turrialba, near the Finca del Volcan de Turrialba, ca. 2000-2400 m, 22 II 1924, ***Paul C. Standley 35080.*** AMES 29147!

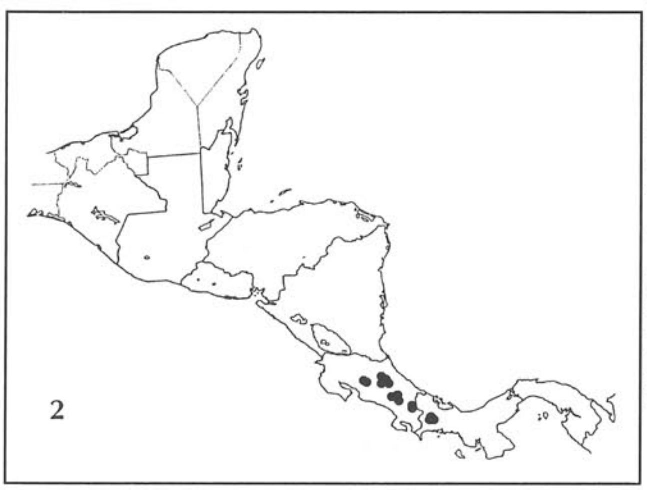
Hierba, epífita, monopodial, ramificada, 15-30 cm. **Raíces** basales, filiformes, 0.3-0.6 mm de grosor. **Tallos** ramificados, tipo caña, lateralmente comprimidos, ancipitosos, bialados, cubiertos por vainas, rugosas; el tallo basal intermedio 11-20 x 0.10-0.25 cm, las ramificaciones secundarias igual o más largas 15-25 x 0.1-0.2 cm, las ramificaciones florales cortas, produciendo a su vez nuevas ramificaciones florales de los internodes subapicales, 1.5-8 x 0.10-0.18 cm. **Hojas** distribuidas a lo largo de los tallo principal y las ramas, generalmente se caen de los tallos más largos o viejos, las hojas de las ramas persistentes, en las ramas secundarias 5-12, en las ramas florales 3-6; vainas foliares tubulares, lateralmente comprimidas, ancipitosas, bialadas, rugosas, 5-15 mm de largo, láminas foliares angostamente lanceoladas a elípticas, bilobadas, subcoriáceas, dorsalmente carinadas, rugosas, margen entero, 2.5-3.5 x 0.2-0.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, dística, erecta, 3-4 cm de largo; pedúnculo corto, bialado, delgado, 3-4 mm de largo, sin brácteas; raquis filiforme, flexuoso **Brácteas florales** del mismo largo a ligeramente más largas que el ovario, tubulares en la mitad basal, ovadas, agudas, 6-8 mm de largo. **Flores** 2-4, generalmente 2, simultáneas, dísticas, el labelo siempre orientado hacia la raquis, verde amarillento, fragancia no registrada. **Ovario** terete, no inflado, no ornamentado, 6-10 x 0.6-0.8 mm. **Sépalos** entreabiertos, libres, ovado lanceolados, agudos, 5-nervados, glabros, margen entero, revoluto, 7-10 x 3-4 mm; los laterales oblicuos. **Pétalos** entreabiertos, libres, linear lanceolados, obtusos, 3-nervados, glabros, membranáceos, margen entero, extendido, 6-9 x 0.8-1 mm. **Labelo** unido a la columna, entero, cordiforme triangular, acuminado, en ocasiones algo estrecho hacia la parte media, 6-8 x 3-4 mm; bicalloso, los callos laminares, alargados, separados por una carina carnosa, la cual llega casi hasta el ápice de la lámina. **Columna** recta, corta, dilatada hacia el ápice, 2-3 mm de largo. **Clinandrio** reducido, entero. **Nectario** penetrando 1/4 del ovario, no inflado, no ornamentado. **Cápsula** sesil, ellipsoidal, con un cuello apical corto de 3.5-4 mm de largo, cuerpo 12 x 7 mm.

Epiphytic, monopodial, braching **herb. Roots** basal, filiform. **Stems** branching, cane-like, laterally compressed, ancipitose, two-winged, the main stem intermediate in length, with somewhat shorter secondary branches and short flowering branches, the floral branches produce in tern new floral branches from subapical internodes. **Leaves** distributed throughout the main stem and the branches, generally deciduous on older stems, persistent on the branches; 5-12 on the main stem, 3-6 on the flowering branches; sheaths tubular, laterally compressed, rugose, blade narrowly lanceolate, bilobed, subcoriaceous, rugose, dorsally carinate. **Inflorescence** apical, racemose, distichous, erect; peduncle short, tow-winged, rachis filiform, flexuous. **Floral bracts** as long or slightly longer than the ovary, the lower half tubular, ovate, acute. **Flowers** 2-4, simultaneous, the lip always facing the rachis, yellowish green. **Ovary** not inflated, terete, smooth. **Sepals** partly spreading, free, ovate-lanceolate, acute, 5-veined, margin entire, revolute, glabrous; **lateral sepals** oblique. **Petals** partly spreading, free, linear-lanceolate, obtuse, 3-veined, glabrous, membranaceous, margin entire, spreading. **Lip** united to the column, entire, cordiform-triangular, acuminate, sometimes somewhat constricted in the middle; bicallose, the calli laminar, elongate, separated by a fleshy central keel which extends nearly to the apex of the lip.**Column** straight, short, dilated towards the apex. **Clinandrium-hood** reduced, margin entire. **Nectary** penetrating 1/4[th] of the ovary, smooth. **Capsule** sessile, ellipsoid, with a short, apical neck.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Known from central Costa Rica and western Panama, along the continental divide. Epiphyte in rainforest, cloud forest, oak forest and at the edge of páramo, at 1550-3200 m altitude. Flowering from April to December, fruiting in march.

RECOGNITION: *Epidendrum microdendron* Rchb.f. belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Rugosum Subgroup which has branching habit with few-flowered inflorescences from short, secondary stems, the leaf-sheaths rugose. The species can be recognized by its intermediate, much-branched, bush-like appearance, with laterally compressed, ancipitose, two-winged stems, generally 2-flowered inflorescence, the rachis filiform, the leaves of the main stem 2.5-3.5 cm long, the lanceolate petals, and the acuminate lip. It is very similar to the more seldom *Epidendrum elcimeyae* Hágsater & García-Cruz, which is vegetatively very similar but has shorter leaves on the main stem, up to 20 mm long, narrowly oblong petals and shorter, acute, triangular-cordate lip. Vegetatively *E. cordiforme* C.Schweinf. is similar, but the stems are terete, and the more membranaceous flowers have a semiorbicular, apiculate lip and spatulate-oblanceolate petals. *Epidendrum orthodontum* Hágsater & L.Sánchez has much more robust plants, terete stems, and the 4-6-flowered inflorescence with thicker, two-winged rachis, and the column with a apical upright tooth.

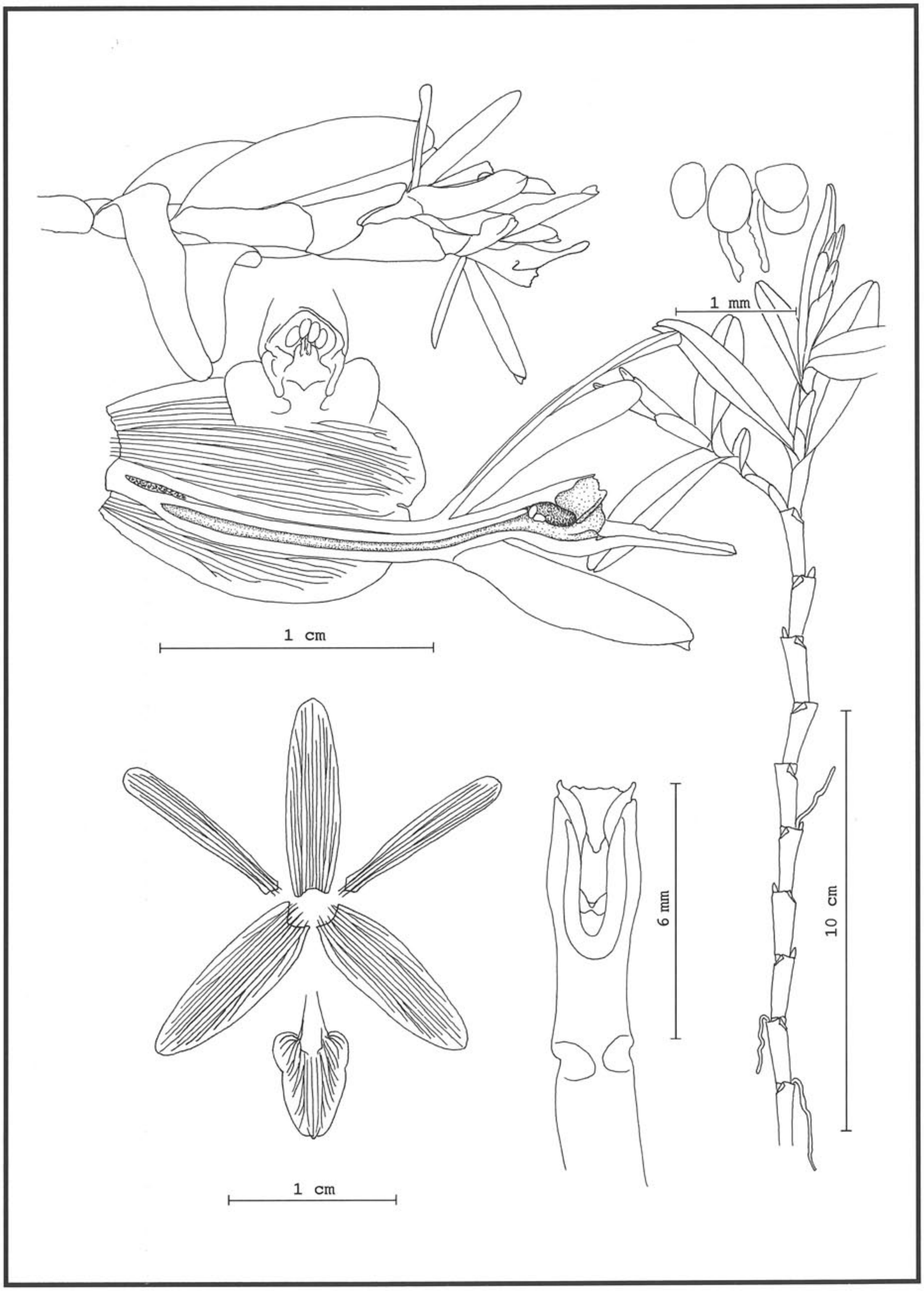


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek-, μικρος, small, and δενδρον, tree, small tree, in reference to the small branching habit of the species which thus looks like a small tree.

REFERENCES: Hágsater, E., et al. 2003. *Epidendrum* in Hammel et al., **Manual de Plantas de Costa Rica**, Vol. III: 141, Missouri Botanical Garden.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM MODESTIFLORUM Schltr. **Plate 1144**

EPIDENDRUM MODESTIFLORUM Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 213. 1923.

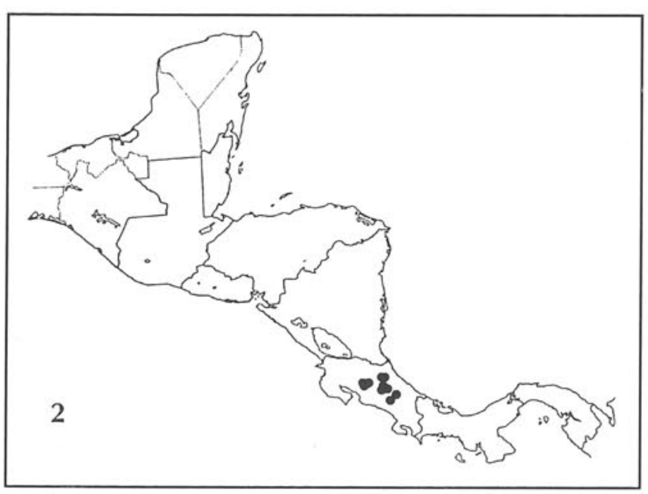
Type: COSTA RICA: Alajuela: Arbres des haies, San Pedro de San Ramón, 1075 m, Sept. 1921, ***A. M. Brenes 128***, B (destroyed). Lectotype (designated by Barringer, 1986): AMES! Isolectotype: CR!

Hierba epífita, monopodial, de tallos rastreros, 18-40 cm o más de largo. **Raíces** producidas cerca de los nudos basales de los tallos y de la base de las ramas, delgadas, < 1 mm de grosor. **Tallos** ramificados, tipo caña, sinuosos, lateralmente comprimidos, el principal 17-32 x 0.3-0.5 cm; las ramas más cortas, hasta de 6 cm largo incluyendo la inflorescencia, se producen del tallo principal y de cerca del ápice de las ramas anteriores. **Hojas** numerosas, alternas, distribuidas a todo lo largo de los tallos; vaina lateralmente comprimida, estriada (en seco), hasta 2.1 x 0.5 cm; lámina angostamente elíptico ovada, subcoriácea, lisa, ápice bilobado, margen entero; las del tallo principal similares de tamaño excepto las 2 basales más pequeñas, 3.6-6.0 x 1.0-1.5 cm; las de las ramas desiguales, progresivamente más largas hasta la penúltima, más cortas que las del tallo principal, 1.5-5.3 x 0.6-1.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo principal y de las ramas, florecen una sóla vez, racemosa, dística, 3.5-4.0 cm de largo; raquis oculto por las brácteas florales, sinuoso, liso, con una bráctea cerca de la base del pedúnculo, más pequeña que las brácteas florales. **Brácteas florales** conduplicadas, prominentes, generalmente un poco más largas que el ovario, obovadas al extenderse, emarginadas, 11-15 x 9 mm. **Flores** 2-3, simultáneas, el labelo siempre orientado hacia el raquis, verdes, con tintes cobrizos en la mitad apical de los sépalos y pétalos, fragancia no registrada. **Ovario** ventralmente ligeramente inflado casi a todo lo largo, 12-15 mm de largo. **Sépalos** entreabiertos, libres, los laterales con la quilla dorsal apical prominente; aristados, glabros, subcoriáceos, angostamente elíptico ovados, 8-9 nervados en la base, varios nervios subdivididos arriba de la base, margen entero, revoluto, 11.0-11.3 x 3.2-3.7 mm. **Pétalos** entreabiertos, angostamente linear oblanceolados, atenuados en la base, ampliamente redondeados, membranáceos, 3-nervados en la base, los nervios laterales subdivididos en la base y hacia la mitad de manera que parecen 7-nervados al centro, margen entero, extendido, 11.0-11.2 x 1.5-1.7 mm. **Labelo** unido a la columna, triangular cordiforme, ligeramente constreñido en el tercio basal, ápice redondeado, mucronado, subcoriáceo, 6.5 x 4.5 mm; callo en forma de "Y". **Columna** recta, delgada, 6 mm de largo. **Clinandrio** prominente, entero, margen eroso, con un diente romo a cada lado. **Antera** subesférica, 4-locular. **Polinios** 4, subovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Lóbulos laterales del estigma** cortos, de 1/5 de largo de la cavidad estigmática. **Nectario** profundo, penetrando casi todo el ovario, estrecho, liso. **Cápsula** no vista

Epiphytic, monopodial, creeping **herb. Roots** produced from the basal nodes of the stems, and the base of the branches, thin. **Stems** branching, cane-like, sinuous, laterally compressed, the main stem longer, the branches shorter, produced from the main stem and from near the apex of the previous branches. **Leaves** numerous, alternate, distributed throughout the stems; sheaths laterally compressed, striated (dry); blade narrowly elliptic-ovate, subcoriaceous, smooth, apex bilobed, margin entire; those of the main stem similar except for the smaller basal two, those of the branches smaller and unequal, progressively longer except for the apical one. **Inflorescence** apical, from the main stem and the branches, flowering only once, racemose, distichous; rachis hidden by the floral bracts, sinuous, smooth, with a bract near the base of the peduncle, smaller than the floral bracts. **Floral bracts** conduplicate, prominent, generally longer than the ovary, obovate when spread, emarginate. **Flowers** 2-3, simultaneous, the lip always facing the rachis, green, with coppery tints on the apical half of the sepals and petals. **Ovary** ventrally slightly inflated, nearly throughout. **Sepals** partly spreading, free, the lateral sepals with a prominent dorsal keel; aristate, glabrous, subcoriaceous, narrowly elliptic-ovate, margin entire, revolute, 8-9-veined at the base, several veins subdivided above the base. **Petals** partly spreading, narrowly linear-oblanceolate, attenuate at the base, widely rounded, membranaceous, 3-veined at the base, the lateral veins subdivided at the base and near the middle, so as to appear 7-veined above, margin entire, spreading. **Lip** united to the column, triangular-cordiform, slightly constricted at the basal third, apex rounded, mucronate, subcoriaceous; callus "Y" shaped. **Column** straight, thin. **Clinandrium-hood** prominent, entire, margin erose, with a rounded tooth at each side. **Anther** subspherical, 4-celled. **Pollinia** 4, subovoid, laterally compressed, subequal; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Nectary** deep, penetrating nearly the whole ovary, narrow, smooth.

OTHER SPECIMENS: COSTA RICA: Alajuela: San Ramon, 01 I 1928, *Brenes 33 (3445)*, NY! La Palma de San Ramon, 1250 m, 08 VIII 1934, *Brenes 2269(142)*, CR! San Pedro de San Ramon, 1065 m, 17 XII 1923, *Brenes 772*, CR! San Ramon, 08 VIII 1924, *Brenes 1000*, NY! Rio Cariblanco, 800 m, col. 19 III 1982, cult. 19 XII 1982, *Hágsater 6700*, AMO! (illustration voucher) Reserva de San Ramon, aproximadamente NNO de San Ramon, 09 XII 1984, *Dressler & Biología s.n.* USJ! **Cartago:** Turrialba, La Suiza, 1350 m, cult. Jardín Botánico Lankester, 27 VII 1991, *Blanco 1722*, USJ! Taos, 1000 m, 10 XI 1984, *Dressler & Biología 158*, CR! USJ! Paraiso Finca Kiri, camino a la Reserva Natural de Tapantí, 1300-1400 m, 25 IX 1996, *Sánchez 407*, AMO! **Heredia:** Sarapiquí, 700 m, 12 VII 1983, *Barringer 3748*, CR! F! Río Sardinal, Atlantic slope of Volcán Barva, 550-670 m, 08 XII 1987, *Grayum 8487*, MO! Sarapiquí Reserva Forestal, El Ceibo Station, 600 m, 30 XI 1990, *Ingram 754*, SEL! **Limón:** Guápiles, Alto Bellavista, cult. Jardín Botánico Lankester, 700-900 m, 15 V 1998, *Pupulin 640*, USJ! **San José:** Desamparados, San Cristobal Sur, 1850 m, 26 IX 1996, *García-Cruz 945*, pressed cult. 14 XI 1997, AMO! pressed cult. 25 VIII 1998, AMO! La Hondura, 1300-1700 m, 02 III 1924, *Standley 36336*, AMES! US! Ibid. 03 III 1924, *36385*, AMES! Ibid. 02 III 1924, *36419*, US! Ibid. *36476*, AMES! US! Ibid. *37677*, AMES! US! Ibid. 16 III 1924, *37960*, AMES!

DISTRIBUTION AND ECOLOGY: Endemic to Costa Rica, Atlantic slopes of the Cordillera Central. Epiphyte in rain forest, from 550 to 1800 m altitude. Flowering from June to January, fruting in March.



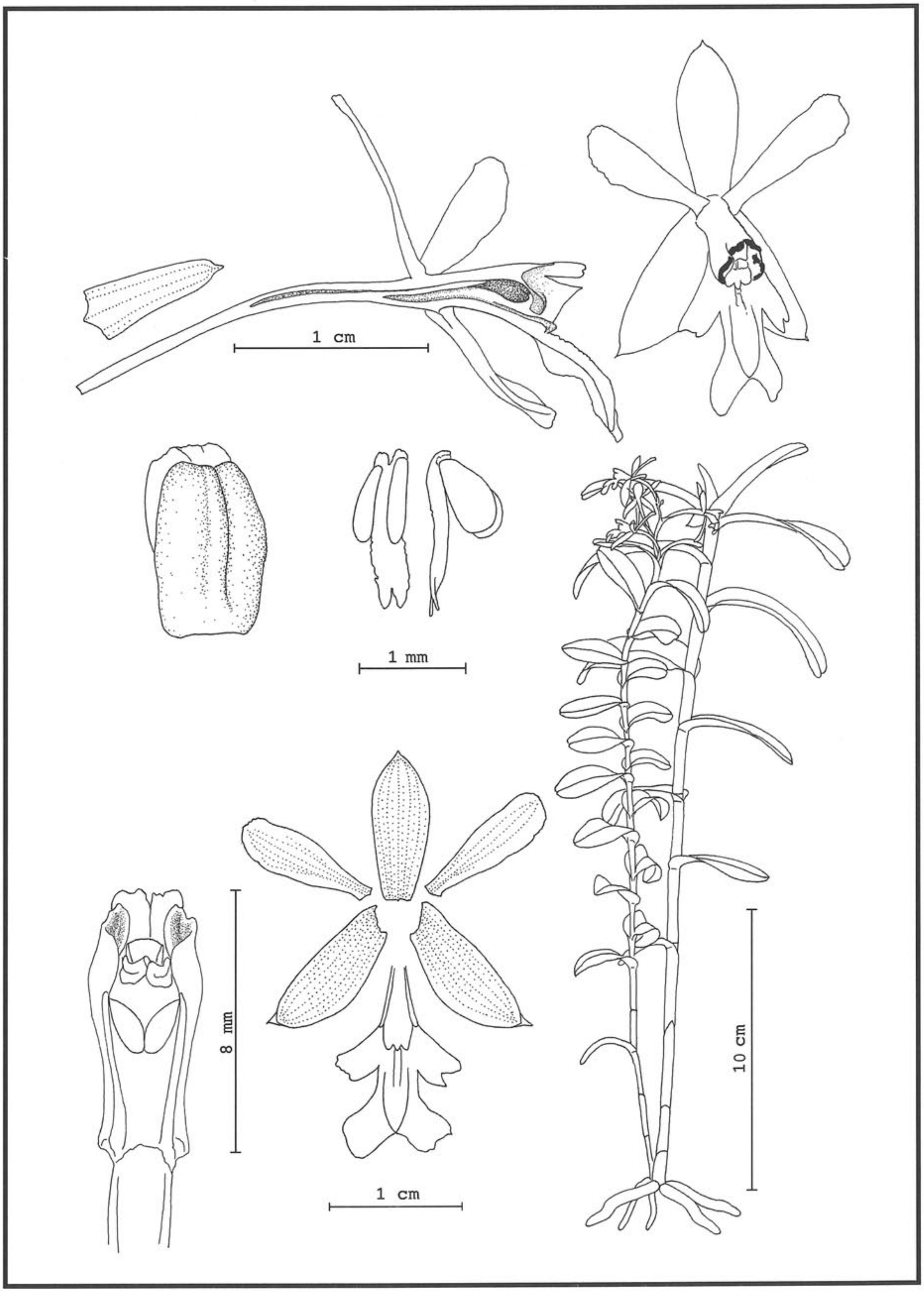
RECOGNITION: *Epidendrum modestiflorum* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Flexicaule Subgroup which has a straggling plant habit, where the main stem is not very evident, and the sepals have a dorsal keel which is generally prominent. The species is recognized by the short (< 5 cm), wide leaves, (up to 15 mm), the relatively large green flowers, sepals 11 mm long, the lip constricted below the middle, 6.4-4.5 mm, and the deep nectary without forming a prominent vesicle. It is similar to *Epidendrum veraguasense* Hágsater from Panama, which has white flowers, a larger lip, 8 x 6 mm, constricted above the middle, and the nectary only penetrates half the ovary and forms a prominent vesicle behind the perianth. *Epidendrum flexicaule* Schltr. has very similar copper-green flowers but the leaves are consistently longer (> 5 cm), narrower (< 8 mm) leaves, and a larger lip, 7 x 6 mm.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *flexuosus*, zigzag, bent alternately in opposite directions, and *caulis*, stem; in reference to the flexuous stems.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM X MONTEVERDENSE (Pupulin & Hágsater) Hágsater **Plate 1145**

EPIDENDRUM X MONTEVERDENSE (Pupulin & Hágsater) Hágsater, Lankesteriana 5(1): 74. 2005.

Basionym: *Oerstedella x monteverdensis* Pupulin & Hágsater, Lankesteriana 8: 32. 2003.

Type: COSTA RICA: Puntarenas: Monteverde, Cerro Plano, finca Beeche, 10°19'13"N, 84°48'35"W, 1550 m, col. G. Barboza, cult. Orchid Garden in Monteverde, 2 VI 2001, ***Franco Pupulin 3216***. Holotype: USJ! Putative origin: *E. endresii* Rchb.f. x *E. exasperatum* Rchb.f.

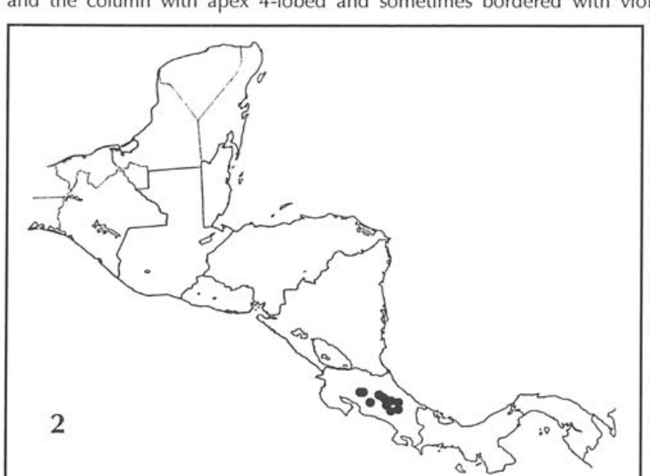
Hierba epífita, cespitosa; 20-200 cm de alto. **Raíces** basales, carnosas, gruesas, blancas; 2.5-4 mm de grosor. **Tallos** muy ramificados arriba en ejemplares vigorosos, tipo caña, teretes, delgados, erectos, rectos; 20-200 x 0.15-0.6 cm. **Hojas** 17-25, distribuidas a todo lo largo del tallo, disticas, articuladas, semiamplexicaules, subcoriáceas; vainas tubulares, verrugosas, las verrugas pequeñas; 8-27 x 1.5-6 mm; lámina angostamente lanceolada a elíptico lanceolada, ápice bilobado, con una carina dorsal baja, margen entero; 2-7.5 x 0.5-3.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical y lateral entre las hojas superiores, racemosa a incipientemente paniculada (ocasionalmente puede producir un racimo adicional en la parte basal del pedúnculo), erecta, pauciflora, algo flexuosa; 4-9 cm de largo; pedúnculo terete, delgado, recto; 5-15 mm de largo; raquis terete, delgado, ligeramente flexuoso. **Brácteas florales** más cortas que el ovario, angostamente triangulares, agudas a acuminadas, abrazadoras, las apicales progresivamente más cortas; 3-12 mm de largo. **Flores** 4-26 (incluyendo todas las flores simultaneas de un solo tallo), simultáneas, resupinadas; sépalos y pétalos amarillo cremoso a verde pálido (los sépalos a veces teñidos de café claro), el labelo blanco cremoso o blanco con una mancha ligera color violeta en el istmo, callo amarillo, el borde apical de los lóbulos de la columna teñido de violeta; fragancia dulce. **Ovario** terete, delgado, no inflado, liso; 15-25 mm de largo. **Sépalos** extendidos, libres, elíptico oblanceolados a angostamente obovados, redondeados, 6-nervados, carnosos, glabros, margen entero; 11-12 x 4.3-6 mm; los **laterales** con una quilla dorsal diminuta. **Pétalos** extendidos, libres, obovado espatulados, redondeados, 3-nervados, margen apical denticulado; 11-12 x 4.5-6 mm. **Labelo** unido a la columna, 3-lobado; 9-16 x 10-11 mm; unicalloso, el callo subcuadrado, tridentado, disco provisto de 1-3 quillas prominentes, carnosas, la central alargada hasta el seno apical; labelo casi tan ancho entre los lóbulos laterales como entre los lobos apicales del lóbulo medio; lóbulos laterales pequeños, subcuadrados, truncados a incipientemente bidentados, margen apical eroso denticulado; 3.8-5 x 3.5-5 mm; lóbulo medio con un istmo largo y angosto en la base; el ápice bilobado, los lobos divergentes, con un seno apical profundo, margen irregular; 8.5 x 11 mm. **Columna** recta, 8 mm de largo; terminada en cuatro lóbulos (un par dorsal y un par lateral), laminares, truncados. **Clinandrio** corto, apenas sobrepasando el cuerpo de la columna, bilobado, margen irregular. **Antera** 4-locular, subrectangular obovoide, truncada en el ápice; provista de una quilla carnosa decurrente. **Polinios** 4, similares, obovoides, lateralmente comprimidos; caudículas más largas que los polinios. **Rostelo** perpendicular con respecto al eje de la columna, formando un seno amplio. **Lóbulos laterales del estigma** obsoletos. **Nectario** poco profundo, apenas penetrando el ovario justo detrás del perianto, no inflado, liso. **Cápsula** no vista.

Epiphytic, caespitose, much branched **herb**. **Roots** basal, fleshy, thick, white. **Stems** much branched above in vigorous specimens, cane-like, terete, thin, erect, straight. **Leaves** 17-25, distributed throughout the stem, distichous, articulate, subcoriaceous; sheaths tubular, verrucose, the warts small; blade narrowly lanceolate to elliptic-lanceolate, apex bilobed, with a low dorsal keel, margin entire. **Inflorescence** apical and lateral between the uppermost leaves, racemose to somewhat paniculate (occasionally producing an additional raceme from the lower part of the peduncle), erect, few-flowered, somewhat flexuous; peduncle terete, thin, straight; rachis terete, thin, somewhat flexuous. **Floral bracts** shorter than the ovary, narrowly triangular, acute to acuminate, amplexicaul, the apical ones progressively shorter. **Flowers** 4-26 (including all simultaneous flowers on one stem), simultaneous, resupinate; sepals and petals creamy yellow to pale green (the sepals sometimes tinged with light brown), the lip creamy white or white with a violet colored spot on the isthmus, callus yellow, the apex of the column bordered violet; fragance sweet. **Ovary** terete, thin, not inflated, smooth. **Sepals** spreading, free, elliptic-oblanceolate to narrowly obovate, rounded, 6-veined, fleshy, glabrous, margin entire; the **lateral** sepals with a minute dorsal keel. **Petals** spreading, free, obovate-spatulate, rounded, 3-veined, apical margin denticulate. **Lip** united to the column, 3-lobed; 3-keeled, the callus subquadrate, tridentate, disc provided with a prominent, fleshy, elongate keel that reaches the apical sinus; lip nearly as wide between the basal lobes as between the apical lobes, lateral lobes subquadrate, truncate a somewhat bidentate, apical margin erose-denticulate; midlobe with a long, narrow, oblong isthmus, apex bilobed, the lobes divaricate, with a deep sinus, apical margin irregular. **Column** straight, apex 4-lobed (a dorsal pair and a lateral pair), laminar, truncate. **Clinandrium** short, barely surpassing the body of the column, bilobed, margin irregular. **Anther** 4-celled, subrectangular-obovoid, apex truncate, provided with a fleshy, decurrent keel. **Pollinia** 4, similar, obovoid, laterally compressed; caudicles longer than the pollinia. **Rostellum** perpendicular to the axis of the column, forming a wide sinus. **Nectary** barely penetrating the ovary behind the perianth, not inflated, smooth.

OTHER SPECIMENS: COSTA RICA: Puntarenas: Monteverde, Ojo de Agua, Finca de Leonel Hernández, 1600 m, 18 XI 1987, *Haber 7789*, CR! **San José**: Fila de la Cordillera de Talamanca, 1 km al sur de Casa Mata, 1950 m, col. 25 III 1981, *Hágsater 6320*, AMO! (Illustration voucher). Paratypes: AMO! USJ! CR! INB! MO! SEL!

DISTRIBUTION AND ECOLOGY: Known from near the continental divide of Cordillera de Tilarán and the northern slopes of Cordillera de Talamanca in Costa Rica. Epiphyte in premontane and lower montane cloud forest, at 1550-1950 m. Flowering January to July.

RECOGNITION: *Epidendrum* x *monteverdense* belongs to the Oerstedella Group which is characterized by the sympodial habit, mostly verrucose stems, and the rostellum which is transverse to the column instead of parallel, forming a wide, open sinus, and Verrucosum Subgroup, recognized by the small to medium sized, membranaceous flowers with sepals and petals immaculate, a bilobed clinandrium hood slightly surpassing the body of the column, obovoid, subequal pollinia with long granulose caudicles. The hybrid is distinguished by the creamy yellow to pale green flowers, the lip white with a pair of violet spots, the lobes truncate, the sepals dorsally unornamented and the column with apex 4-lobed and sometimes bordered with violet at the apex. Vegetatively it is very similar to *Epidendrum exasperatum* Rchb. f. which has the sheaths dotted with brown, not verrucose, flowers greenish brown, the lip white somewhat tinged with violet and turning yellowish with time, the lateral lobes more or less bifid, with at least one long, acuminate, tooth, and the sepals dorsally exasperate. *Epidendrum endresii* Rchb.f. has small plants with unbranched stems, the leaves ovate, an apical inflorescence with white flowers, the lip and the apex of the column tinged with purple; sepals dorsally smooth, and the lateral lobes of the lip subquadrate-oblong. *Epidendrum parviexasperatum* (Hágsater) Hágsater has the stems covered with small warts, apical and lateral inflorescences with somewhat smaller flowers (sepals 7.5-10 mm long), dorsally exasperate, brown with the margins yellowish, the lip and column white somewhat tinged with violet, and the lateral lobes of the lip subquadrate.

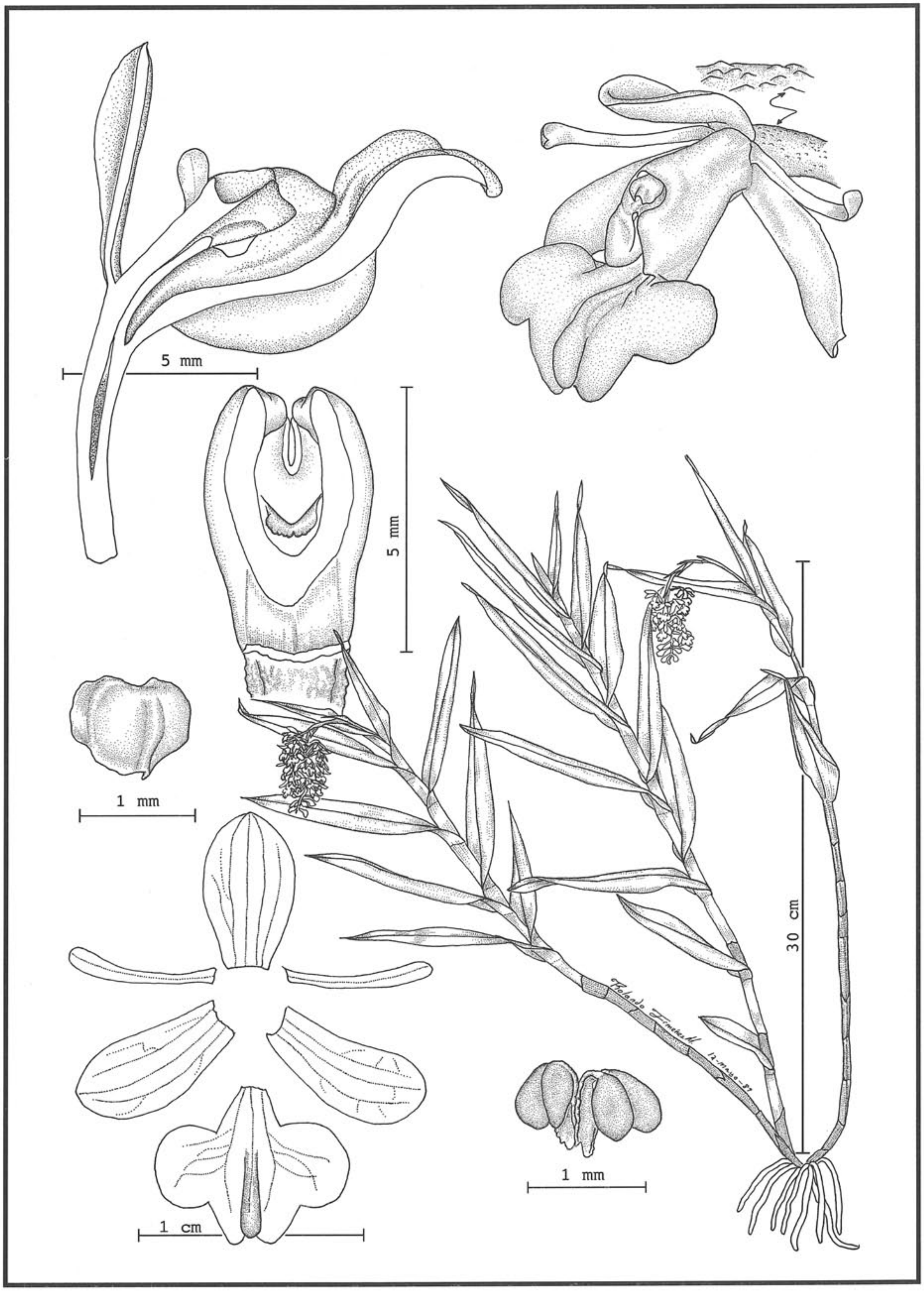


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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the type locality, and internationally renowned orchid "hot spot" Monteverde, Costa Rica.

REFERENCES: Hágsater, E., & M. A. Soto Arenas, 2005, Transfers to *Epidendrum* L. From *Oerstedella* Rchb.f., **Lankesteriana** 5(1): 74.



EPIDENDRUM MOTOZINTLENSIS Hágsater & L.Sánchez **Plate 1146**

EPIDENDRUM MOTOZINTLENSIS Hágsater *et* L.Sánchez, *sp. nov.*

Type: MEXICO: Chiapas: (De Buenos Aires, km 49 de la carretera Huixtla-Siltepec, sale la desviación a Siltepec) km 16 del camino Buenos Aires-Siltepec, 2090 m, col. 15 July 1987, press. 16 May 1989, ***Miguel Angel Soto; Isabel Alcocer, Rolando Jiménez M. 3225.*** Holotype: AMO! Isotype: MEXU! (Illustration voucher) Isotype: AMES! Clonotype: press. 13 September 1989, MO!

Epidendro clowesii Bateman ex Lindl. simile sed petalis filiformibus, labelli lobulo medio brevi transverse rectangulari et apice acuminato, floribus viridibus cum labello albo-viridulo.

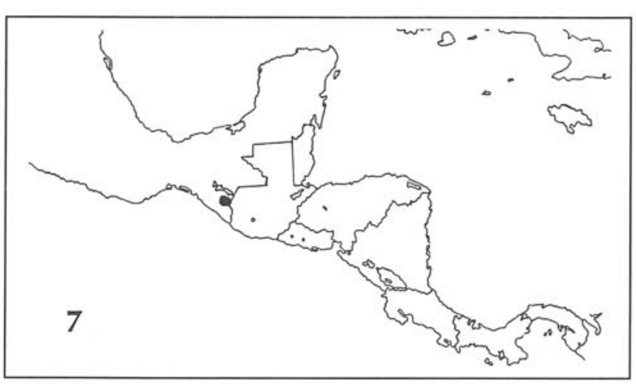
Hierba epífita, simpodial, cespitosa, erecta, 30-55 cm de alto ó más, incluyendo la inflorescencia. **Raíces** basales, carnosas, gruesas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, rectos, 25-40 x 0.25-0.45 cm. **Hojas** 7-13, dísticas, distribuidas en los dos tercios apicales del tallo; vaina foliar, tubular, algo lateralmente comprimida, papiráceas cuando viejas y después de haber perdido el limbo, 1.5-4.0 cm de largo; lámina angostamente elíptico lanceolada, acuminada, mucronada, ligeramente carinada, subcoriáceas, margen entero, extendido, 7-18.5 x 1.2-2.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, pluriracemosa, densa, 8-16 cm de largo, puede florecer de los nudos de la inflorescencia primaria en años posteriores, formando racimos compuestos; pedúnculo 4-8 cm, cubierto por 2-4 brácteas imbricadas, tubulares, oblongo triangulares, agudas, acuminadas, 2-4 cm de largo; raquis terete, liso. **Brácteas florales** generalmente más cortas que el ovario, las basales casi del mismo largo del ovario, progresivamente más cortas hacia el ápice, ovado triangulares, agudas, 2-10 mm de largo. **Ovario** terete, verrugoso, 4-9 x 0.3-0.6 mm. **Flores** 15-45 por racimo, simultáneas, resupinadas, verdes, en ocasiones columna y labelo blanco verdosos, fragancia herbácea, ligera. **Sépalos** extendidos, libres, glabros, elíptico obovados, obtusos, 3-5-nervados, margen entero, extendido, 6.8-7.8 x 3.2-4.2 mm; los **laterales** oblicuos. **Pétalos** entreabiertos, libres, glabros, filiformes, obtusos, 1-nervados, margen entero, extendido, 6.0-7.5 x 0.2-0.5 mm. **Labelo** unido a la columna, trilobado, base truncada, carnoso, 5.0-6.3 x 7-8.3 mm; bicalloso, los callos laminares, prominentes, carnosos; el disco con una carina central prominente, carnosa, la cual se prolonga hasta el seno del lóbulo medio; lóbulos laterales suborbicular elípticos, enteros, 1.9-2.3 x 2.5-3.0 mm; lóbulo medio transversalmente rectangular, con un seno en el ápice formando un mucrón, 1.5-2.1 x 2.5-3.5 mm. **Columna** recta, obcónica, delgada en la base, 3.5-4.2 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, angostamente obovoides, lateralmente comprimidos; caudículas suaves y granulosas, de longitud similar a ligeramente más largas que la de los polinios; viscidio viscoso, transparente. **Rostelo** apical hendido. **Lóbulos laterales del estigma** de 1/2 de la longitud de la cavidad estigmática. **Nectario** corto, penetrando 1/5 del ovario, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, laterally compressed, straight. **Leaves** 7-13, distichous, distributed throughout the apical 2/3 of the stems; sheaths tubular, somewhat laterally compressed, papiraceous when old, after loosing the blade; blade narrowly lanceolate-elliptic, acuminate, mucronate, slightly ncarinate, subcoriaceous, margin entire, spreading. **Inflorescence** apical, pluri-racemose, dense, forming new racemes in successive years from the lower nodes of the peduncle; peduncle somewhat elongate, with 2-4 imbricating, tubular, oblong-triangular, acute to acuminate bracts; rachis terete, smooth. **Floral bracts** generally shorter than the ovary, the basal ones as long as the ovary, progressively shorter, ovate-triangular, acute. **Ovary** terete, verrugose. **Flowers** 15-45 per raceme, simultaneous, resupinate, green, the column and lip occasionally greenish white; fragrance weak, herbaceous. **Sepals** spreading, free, glabeous, obovate-elliptic, obtuse, 3-5-veined, margin entire, spreading; the lateral sepals oblique. **Petals** partly spreading, free, glabrous, filiform, obtuse, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base truncate, fleshy; bicallose, the calli laminar, prominent, fleshy, disc with a central, prominent, fleshy keel that ends in the apical sinus forming a mucro. **Column** straight, obconical, thin at the base. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, narrowly obovoid, laterally compressed; caudicles soft and granulose, as long as or slightly longer than the pollinia; viscidium viscous, transparent. **Rostellum** apical, slit. **Nectary** short, penetrating 1/5[th] of the ovary, smooth.

OTHER SPECIMENS: MEXICO: Chiapas: On the ridge above Siltepec on the road to Huixtla, 2000-2400 m, 18 I 1973, *Breedlove 31860*, AMES! CAS! Motozintla de Mendoza km 48, Carretera Huixtla-Motozintla, 2300 m, 15 IX 1985, *Hágsater 8080*, AMO! (Illustration, flowers in spirit) Motozintla de Soconusco system, W slopes, Mt. Boqueron above Huixtla, ca 1400 m, 5 III 1935, *Nagel 4315*, AMES x2! Mendoza (De Buenos Aires, km 49 de la carretera Huixtla-Siltepec, sale la desviación a Siltepec) km 16 del camino Buenos Aires-Siltepec, 2090 m, 15 VII 1987, *Soto 3223*, AMO x5! (Illustration).

DISTRIBUTION AND ECOLOGY: Known only from Mexico, Chiapas, from the area of Motozintla. Epiphyte in montane broadleaf forest, at 1400-2300 m altitude. Flowers in cultivated from September to May.

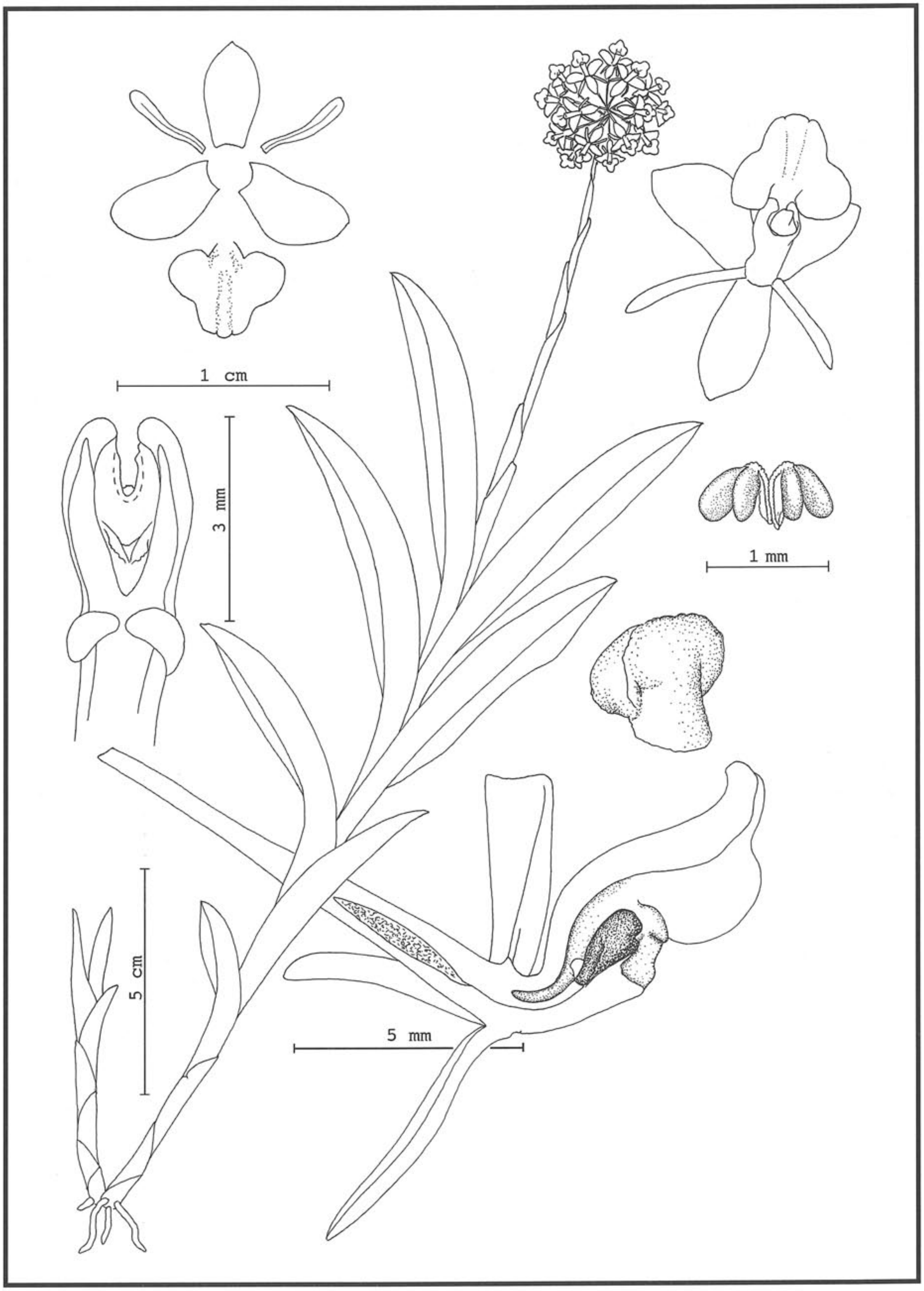
RECOGNITION: *Epidendrum motozintlensis* belongs to the Anceps Group, which is recognized by the simple stems, generally elongate, compound racemose inflorescence producing new successive racemes with time, fleshy flowers, filiform to narrowly spatulate petals, and the Polyanthum Subgroup which has elongate, not subcorymbose racemes. The species is recognized by the laterally compressed stems, verrugose ovary, green flowers, the column and lip occasionally greenish white, the sepals and petals glabrous, 6.8-7.8 mm long, petals 1-veined, the 3-lobed lip with entire, suborbicular to elliptic lateral lobes, the midlobe short, transversely rectangular with an apical sinus, bicallose, the calli prominent, fleshy, and the disc with a prominent central keel. *Epidendrum clowesii* Bateman ex Lindl. has the petals linear to narrowly spatulate, midlobe of the lip oblong, rectangular, apically slit to form a pair of lobes, the callus prolongued into two keels, the flowers olive green, with the sepals and petals occasionally tinged brown and the lip greenish white. *Epidendrum chlorops* Rchb.f. has terete to somewhat laterally compressed stems, larger flowers, sepals and petals 10-15.5 mm long, the petals narrowly spatule, a smooth ovary, and the lateral lobes of the lip with evidently thickened, short veins near the base, and the midlobe oblong-rectangular, slit and forming a pair of apical lobes, the calli prolonguend into two keels. *Epidendrum polyanthum* Lindl., known from southern Mexico, Belize, Guatemala, El Salvador and Honduras has terete stems, 8-10 mm long sepals, the flowers orange-yellow, and the lateral lobes of the lip semiovate, with the midlobe oblong-quadrate and the apex emarginate.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the area of Motozintla, Chiapas, where the species has been found.

Authors: E. Hágsater & L. Sánchez S. **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM MUSCIFERUM Lindl. **Plate 1147**

EPIDENDRUM MUSCIFERNUM Lindl., J. Bot. (Hooker). I: 6. 1834.

Type: COLOMBIA: "Panama et Colombia" [North coast of Colombia], ***Cuming s.n.*** Holotype: K-L! Isotypes: E x2! W 49513!

Hierba epífita o rupícola, simpodial, cespitosa, 17-85 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, delgadas, 0.8-2.0 mm de grosor. **Tallos** sencillos, tipo caña, ancipitosos, rectos, 10-21 x 0.25-1.0 cm. **Hojas** 4-10, dísticas, distribuidas a lo largo del tallo o en los dos tercios apicales del tallo, verde oscuro raramente moradas; vaina foliar tubular, ancipitosa, estriada en seco, 1-2 cm de largo, lámina elíptica conduplicada en la base, obtusa a retusa, mucronada, coriáceas, carina dorsal evidente, 2-13 x 1.3-3.4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa a pluriracemosa, el racimo subcorimboso, denso, produciendo nuevos racimos durante varios años consecutivos del mismo escapo, dando la apariencia de una inflorescencia paniculada, 8-65 cm de largo; pedúnculo largo, ancipitoso, 4-56 cm de largo; cubierto por 3-12 brácteas imbricadas, tubulares, lateralmente comprimidas, oblongas, agudas a obtusas, 1.5-4 x 0.4-0.8 cm. **Brácteas florales** mucho más cortas que el ovario, abrazadoras, triangular ovadas, acuminadas, 1.5-2.5 x 1-2 mm. **Flores** 7-25 por racimo, simultáneas, no resupinadas, color café canela a amarillas con tonalidades rojo púrpura, verdosas, o amarillentas a naranjas, en el labelo pueden predominar los tonos rojizos, verdes y amarillos, columna principalmente verdosa ocasionalmente con el ápice blanco, fragancia no registrada. **Ovario** no inflado, terete, no ornamentado, 6-15 mm de largo. **Sépalos** extendidos a reflexos, libres, obtusos, mucronados, subcoriáceos, margen entero, extendido, 4.5-6.0 x 2.0-3.2 mm; el **dorsal** oblanceolado, 3-nervado; los **laterales** en ocasiones entreabiertos, oblicuamente obovados, obtusos, 3-5 nervados. **Pétalos** reflexos en ocasiones extendidos, linear oblanceolados, obtusos, 1-nervados, margen entero, extendido, 4.5-5.0 x 0.5-0.8 mm. **Labelo** unido a la columna, trilobado a oscuramente trilobado, ligeramente cóncavo, carnoso, margen entero, extendido; ecalloso, unicarinado, la carina evidente, carnosa y amplia, prolongándose hasta el seno apical, 3.0-4.2 x 3.5-5.5 mm; lóbulos laterales semiorbiculares a semiovados, 0.8-2.0 x 1.5-2.5 mm; lóbulo medio con un seno donde termina la quilla central redondeada, formando dos lóbulos semiorbiculares, los lóbulos en ocasiones no son evidentes debido la presencia de la quilla, 0.8-1.7 x 1.3-2.5 mm. **Columna** arqueada en la base, obcónica, delgada en la base, 3-4 mm de largo. **Clinandrio** corto, margen entero. **Antera** obreniforme, ápice cónico, 4-locular. **Polinios** 4, ovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, de longitud similar a la de los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de 1/2 de la longitud de la cavidad estigmática. **Nectario** corto, llegando hasta la zona de inserción de los segmentos del perianto. **Cápsula** no vista.

Epiphytic or lithophytic, sympodial, caespitose **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, ancipitose, straight. **Leaves** 4-10, distichous, distributed throughout the stem to along the upper 2/3, dark green, rarely pinged purple; sheath tubular, ancipitose, striated when dry; blade elliptic, base conduplicate, apex obtuse to retuse, mucronate, coriaceous, with an evident dorsal keel. **Inflorescence** apical, racemose to pluriracemose, the racemes subcorymbose, dense, producing new racemes from the same inflorescence over the years and thus appearing paniculate; peduncle elongate, ancipitose, covered by 3-12 imbricating, tubular, laterally compressed, oblong acute to obtuse bracts. **Floral bracts** much shorter than the ovary, amplexicaul, triangular-ovate, acuminate. **Flowers** 7-25 per raceme, simultaneous, non-resupinate, cinnamon brown to yellow tinged with purple-red, greenish or yellowish to orange, the lip predominantly reddish, green or yellow, the column mainly green, the apex occasionally white. **Ovary** not inflated, terete, smooth. **Sepals** spreading to reflexed, free, obtuse, mucronate, subcoriaceous, margin entire, spreading; the dorsal sepals oblanceolate, 3-veined; the lateral sepals occasionally partly spreading, obliquely obovate, obtuse, 3-5-veined. **Petals** reflexed, to sometimes spreading, linear-oblanceolate, obtuse, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed to obscurely 3-lobed, slightly concave, fleshy, margin entire, spreading; ecallose, with a single, evident, fleshy, wide keel running down to the apical sinus; lateral lobes semiorbicular to semiovate; midlobe with a sinus, forming the semiorbicular lobes, the lobes occasionally not evident to the thickened central keel. **Column** arching at the base, obconical, thin at the base. **Clinandrium-hood** short, margin entire. **Anther** obreniform, apex conical, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles soft and granulose, about as long as the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** short, penetrating as far as the perianth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widely distributed in Panama and throughout tropical South America down west coast to northwestern Peru, the Caribbean coast and surrounding the Amazon River (Colombia, Venezuela, Guyana, Surinam, French Guyana, Ecuador, Brazil, Peru y Bolivia), from sea level to 1000 m altitude. Flowering throughout the year.

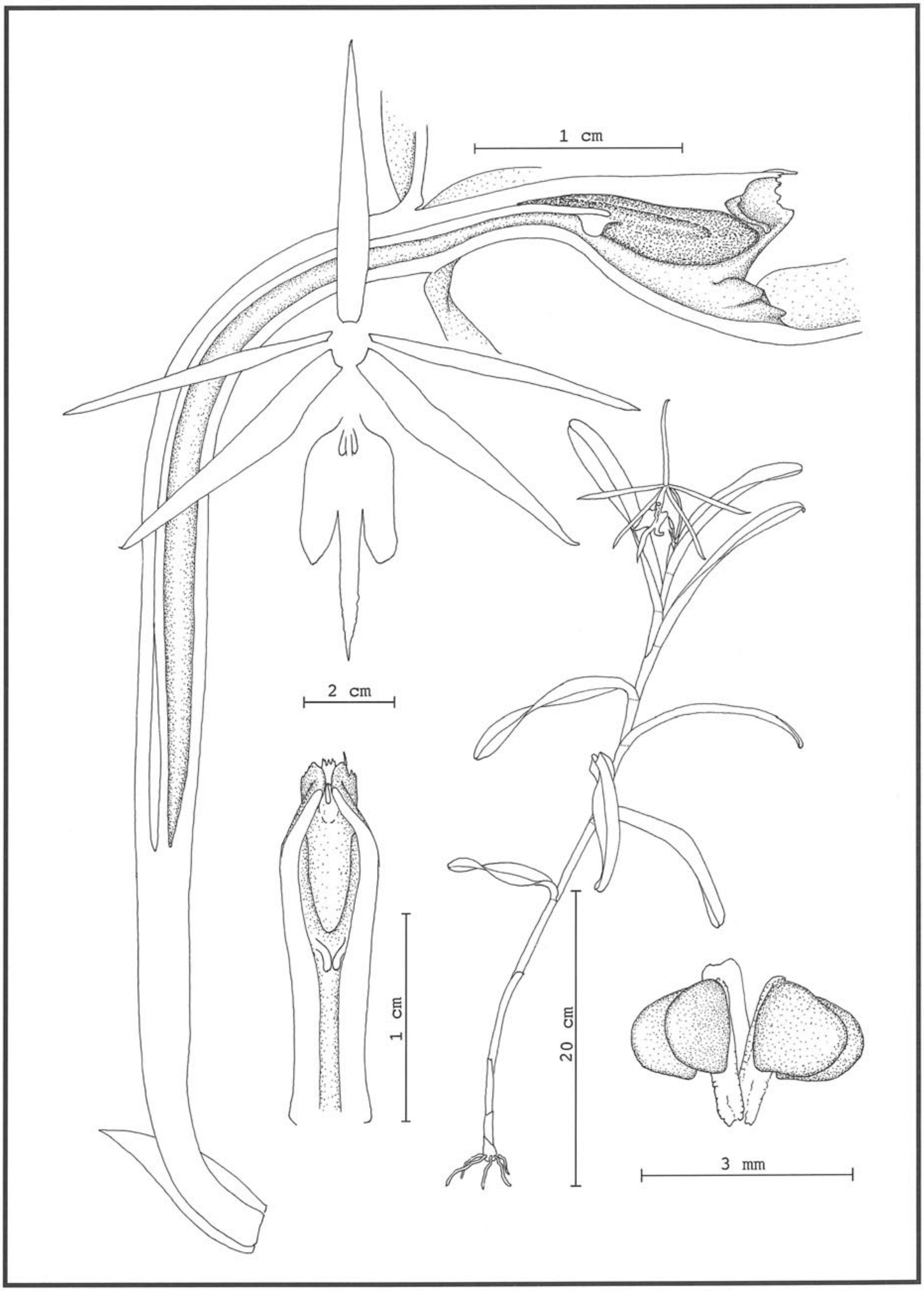


RECOGNITION: *Epidendrum musciferum*, belongs to the Anceps Group, which is recognized by the simple stems, generally elongate, compound racemose inflorescence producing new successive racemes with time, fleshy flowers, filiform to narrowly oblanceolate petals; and the Anceps Subgroup which has short subcorymbose racemes. The species is recognized by the small sized flowers, sepals 4.5-6.0 mm long, cinnamon brown to yellow somewhat tinged with red-purple, greenish, yellowish to orange, the lip can be predominantly reddish, green or yellow, and the column is mainly green, the apex occasionally white. *Epidendrum anceps* Jacq. is widely distributed in Honduras, Nicaragua, Costa Rica, Panama and the Antilles as well as Surinam and the French Guiana, and has larger, wider leaves, 5-15 x 3-5 cm, the flowers are larger, sepals 3.5-8.6 mm long, and generally green, rarely tinted brown. *Epidendrum amphistomum* A.Rich. from the United States (Florida), Cuba and Hispaniola has larger flowers sepals 5.5.-7.5 mm long, greenish yellow to ref-brown flowers and the lip bilobed. *Epidendrum galeottianum* A. Rich. & Galeotti ranges from Mexico to central Nicaragua, and has large plants, 25-100 cm tall, larger leaves, 4.5-23 cm long and purple tinged, the flowers are larger, sepals 5-8 mm long, greenish brown, the apex of the column and the lip purple.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *musci*, flies, and the suffix *-fer*, bearing, producing, in allusion the small, fly-like flowers.

Authors: L. Sánchez S. & E. Hágsater **Illustrator:** E. Hágsater **Editors:** E. Hágsater & L. Sánchez S.
Herbario AMO México, D.F., MÉXICO



EPIDENDRUM X NOCTEBURNEUM Hágsater & L.Sánchez **Plate 1148**

EPIDENDRUM X *NOCTEBURNEUM* Hágsater et L.Sánchez, *hybr. nat. nov.*

Type: PANAMA: Comarca de San Blas, Nusagandí, El Llano Cartí, carretera, pressed 5 III 1982, *Robert L. Dressler sub* ***Eric Hágsater 6285.*** Holotype: AMO! Clonotypes: pressed 22 VI 1984, AMES! MO! SEL! pressed 7 XI 1984, NY! PMA!

Epidendro nocturno Jacq. simile sed caulibus lateraliter compressis et latis, foliis majoribus, floraliter labello similari suo *E. eburnei* Rchb.f. sed sinibus profundis, labelli lobulo medio longo, differt.

Hierba epífita, simpodial, cespitosa, 27-54 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas. **Tallos** sencillos, tipo caña, lateralmente comprimidos, 15-42 x 0.4-1.0 cm. **Hojas** 6-7, distribuidas en la mitad a las tres cuartas partes apicales del tallo, coriáceas; vaina foliar tubular, lateralmente comprimida, 2-5 cm de largo; lámina elíptico lanceolada, bilobada, carina dorsal evidente, 7.5-14.5 x 1.8-3.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa a pluriracemosa, produce una flor a la vez y florece durante varios años. **Bráctea floral** mucho más corta que el ovario, triangular, acuminada, 6-13 x 3-5 mm. **Ovario** terete, no inflado, no ornamentado, 50-75 x 1.8-4.0 mm. **Flores** una a la vez, si hay dos, producidas de diferentes racimos, sucesivas, resupinadas, sépalos y pétalos verde a verde amarillentos, labelo blanco, columna completamente blanca a la mitad basal verde, mitad apical blanca, los callos amarillos, fragancia no registrada. **Sépalos** extendidos, angostamente elíptico lanceolados, acuminados, 9-nervados principales de las cuales se originan varias más dando la apariencia de tener 12 o más nervaduras, margen entero, revoluto, 48-63 x 3.5-5.5 mm. **Pétalos** extendidos, linear lanceolados, acuminados, 5-nervados con algunas nervaduras secundarias dando la apariencia de ser 7-9 nervados, margen entero, revoluto, 45-63 x 2.5-4.0 mm. **Labelo** unido a la columna, trilobado, base cordada, 35-55 x 20-25 mm; bicalloso, los callos laminares, prominentes, redondeados; disco con numerosas nervaduras evidentes; lóbulos laterales oblicuamente oblongos, raramente oblicuos, redondeados, 25-32 x 7.5-10.0 mm; lóbulo medio separado de los laterales por senos profundos, acicular, acuminado, 20-35 x 4-7 mm. **Columna** recta a arqueada, dilatada hacia el ápice, 15.2-18.3 x 2.5-5.0 mm. **Clinandrio** prominente, el margen dentado fimbriado. **Antera** ovoidea, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando 2/3 partes de la cavidad estigmática. **Nectario** penetrando 2/3 del largo del ovario, delgado, liso. **Cápsula** elipsoide, pedicelo 2.5 x 0.3 cm, cuerpo ocupando 3/4 del ovario, localizado ligeramente arriba de la mitad del ovario, 4.5 x 1.0 cm, cuello apical, 1.5 x 0.4 cm.

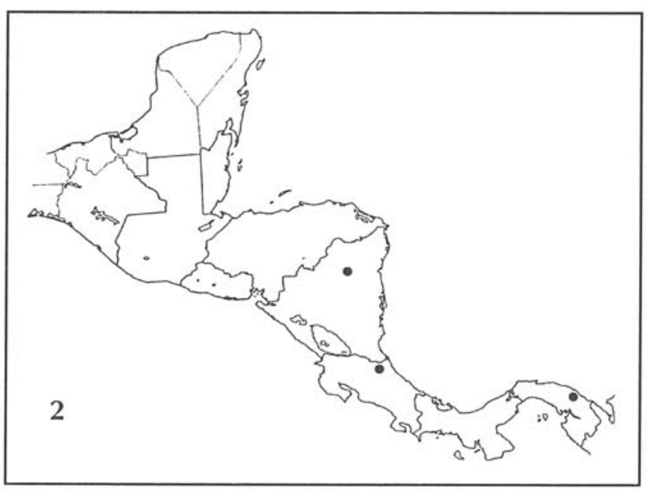
Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy. **Stems** simple, cane-like, laterally compressed. **Leaves** 6-7, distributed along the apical ½ to ¾ of the stem, coriaceous; sheath tubular, laterally compressed; blade elliptic-lanceolate, bilobed, with an evident dorsal keel. **Inflorescence** apical, racemose to pluri-racemose, producing one flower at a time over several years. **Floral bract** much shorter than the ovary, triangular, acuminate. **Ovary** terete, not inflated, smooth, about as long as the sepals. **Flowers** one at a time from each raceme, successive, resupinate, sepals and petals green to yellowish green, lip white, column white or the basal half green and the apical half white, calli yellow. **Sepals** spreading, narrowly elliptic-lanceolate, acuminate, 9-veined, the main veins bifurcate, so as to appear 12-veined or more, margin entire, revolute. **Petals** spreading, linear-lanceolate, acuminate, 5-veined, with several secondary veins so as to appear 7-9-veined, margin entire, revolute. **Lip** united to the column, 3-lobed, base cordate; bicallose, the calli laminar, prominent, rounded; disc with numerous evident veins; lateral lobes obliquely oblong, rounded; midlobe separate from the lateral lobes by deep sini, acicular, acuminate. **Column** straight to arching, dilated towards the apex. **Clinandrium-hood** prominent, margin dentate-fimbriate. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** penetrating 2/3 of the ovary, thin, smooth. **Capsule** ellipsoid, pedicel short, body occupying ¾ of the length of the fruit, slightly above the middle, apical neck short.

OTHER SPECIMENS: NICARAGUA: Zelaya [Atlántico Norte]: Siuna, Waní, 100 m, 19 X 1982, *Ortiz 387*, SEL! **COSTA RICA:** San Miguel de Sarapiquí, finca de Dirk van Wilpe, 8 XI 1966, *Weston 57 sub Rodríguez 1042*, USJ! [a peloric form with the petals somewhat similar to the lip]. Illustrated in watercolour by R. Lucas Rodríguez #433; xerox, AMO!

OTHER RECORDS: PANAMA: Comarca de San Blas, Nusagandí, El Llano Carti, carretera, *Hágsater 6285*, flowers in spirit AMO! Illustration 16 IX 1981, AMO! Xerox copy ENCB! Xerox copy MEXU!

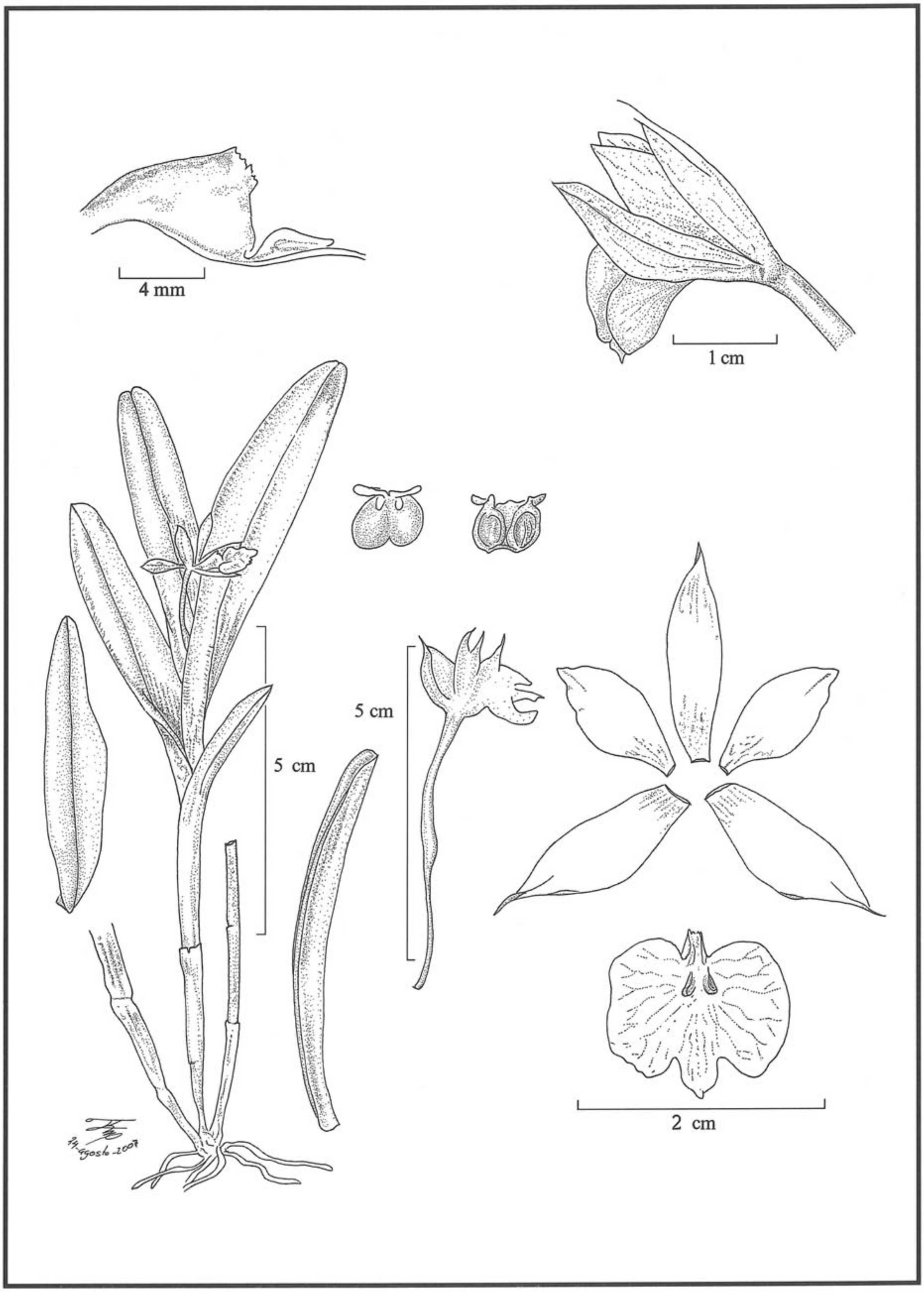
DISTRIBUTION AND ECOLOGY: This natural hybrid is known from Nicaragua, Costa Rica and Panama, from the Caribbean lowlands; epiphytic at 100 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum x nocteburneum* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, cane-like stems, non-thickened towards the middle, and usually successive flowers, short, racemose or pluri-racemose inflorescence, without spathaceous bracts, usually large, star-shaped flowers, with similar sepals and petals. The species can be recognized by the laterally compressed stems wide towards the apex (4-10 mm wide), long leaves (7.5-14.5 cm long), 3-lobed lip, the lateral lobes obliquely oblong, and the body of the capsule occupying ¾ of the ovary, slightly above the middle. *Epidendrum nocturnum* Jacq. is widely distributed and has terete stems (2-5 mm thick), somewhat shorter leaves (4-12.5 cm long), the lateral lobes of the lip ovate to ovate-lanceolate, and the body of the capsule occupying nearly the whole length of the ovary, and located in the middle of the fruit. *Epidendrum eburneum* Rchb.f. has laterally compressed stems, wide towards the apex, and an entire, suborbicular, apiculate lip, rarely with a shallow sinus on each side of the apicule, and the body of the capsule occupying much of the length of the fruit. *Epidendrum ocotalense* Hágsater & L.Sánchez is endemic to Nicaragua, at 1200 m altitude, has short plants, ancipitose, narrow stems (to 5 mm wide), narrow leaves (1-2 cm wide), small flowers (sepals 15-18 mm long), and the midlobe of the lip is short, subquadrate with the apex triangular, obtuse, only slightly longer than the lateral lobes. *Epidendrum angustilobum* Fawc. & Rendle (syn. *Epidendrum latifolium* (Lindl.) Garay & Sweet)) ranges widely in the Antilles, the northern coast of South America in Colombia, Venezuela and the Guyanas, and is rare in Costa Rica and Panama, and has tall, ancipitose stems, a very long ovary (120-200 mm long), and wide leaves (2-7 cm), with ovate-triangular lateral lobes of the lip, and the body of the capsule short and above the middle of the fruit. *Epidendrum buenventurae* F.Lehm. & Kraenzl. ranges along the Pacific watershed from southern Mexico (Isthmus of Tehuantepec), through Honduras, Nicaragua, Costa Rica, Panama to Colombia, and has shorter plants (17-30 cm tall), narrow stems (2-4.5 mm thick, the leaves green above, tinged purple-red below, small flowers (sepals 25-46 mm long), a short ovary (35-50 mm long), and the body of the capsule occupying half the length of the ovary and in the middle. *Epidendrum mesocarpum* Hágsater grows at higher altitudes (900-2000 m) in southern Mexico (between Oaxaca and Chiapas), Guatemala, El Salvador, Honduras and Nicaragua, has flattened, ancipitose stems, a long ovary (120-160 mm long), and an elongate body of the capsule, (45-70 mm long).



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the latin *nocturna* night (-scented), and *eburneus*, ivory white, in reference to the color of the lip; derived from the putative parents of this natural hybrid.



EPIDENDRUM OCOTALENSE Hágsater & L.Sánchez **Plate 1149**

EPIDENDRUM OCOTALENSE Hágsater *et* L.Sánchez, sp. nov.

Type: NICARAGUA: Nueva Segovia: Villa de Flor, 1220 m, 27 December 1966, ***Alfonse H. Heller 10812.*** Holotype: SEL 3423! Xerox copy AMO! Illustration, prepared by Fritz Hamer, 26 August 1981, mounted on the holotype. The Hamer illustration is somewhat different from that of Heller *H.10812* [SEL! xerox AMO!], especially in relation to the details of the shape of the petals and lip. We have the impression that the Hamer illustration is a better match to the sole flower of the Holotype.

Epidendro buenaventurae F.Lehm. & Kraenzl. simile sed floribus minoribus, sepalis petalisque leviter patentibus, petalis rhombeis quam sepalis latioribus, labelli lobulo medio brevi lobulos laterales leviter excedenti, subquadrato, apice triangulari obtuso, differens.

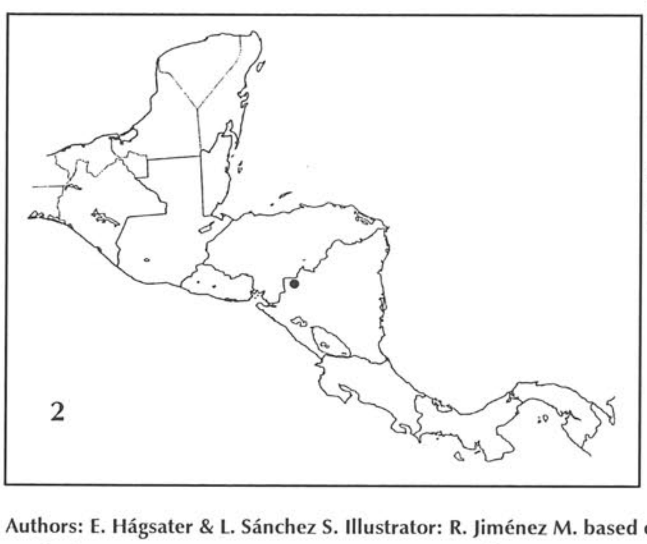
Hierba epífita, simpodial, cespitosa, 20 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, gruesas. **Tallos** sencillos, tipo caña, ancipitosos, 10 x 0.5 cm. **Hojas** 2-4, distribuidas en la mitad apical del tallo, coriáceas; vaina foliar tubular, lateralmente comprimida, 0.5-2 cm de largo; lámina ovada elíptica, bilobada, carina dorsal evidente, 4-11 x 1-2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa a pluriracemosa, produce una flor a la vez y florece durante varios años. **Bráctea floral** mucho más corta que el ovario. **Ovario** terete, no inflado, no ornamentado, 45 mm de largo. **Flores** una a la vez, sucesivas, resupinadas, color no visto, fragancia no registrada. **Sépalos** entreabiertos, elíptico, acuminados, 9-nervados, margen entero, extendido, 15-18 x 4.7-5.7 mm; los laterales algo oblicuos. **Pétalos** entreabiertos, rómbicos, oblicuos, agudos, 3-nervados con numerosas nervaduras secundarias dando la apariencia de tener 5 o más nervaduras, margen entero, extendido, 12-13 x 5.5-5.7 mm. **Labelo** unido a la columna, trilobado, base cordada, 13 x 15 mm; bicalloso, los callos laminares, prominentes, divergentes; disco con una quilla prominente, la cual se prolonga hasta cerca del ápice del lóbulo medio; lóbulos laterales transversalmente elípticos, enteros, 11 x 5 mm; lóbulo medio corto, ligeramente sobrepasando a los laterales, subcuadrado con el ápice triangular, obtuso, 3.0 x 2.8 mm. **Columna** recta, dilatada hacia el ápice, 10 x 5 mm. **Clinandrio** reducido, el margen dentado. **Antera** no vista. **Polinios** no vistos. **Rostelo** no visto. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, ancipitose, short. **Leaves** 2-4, distributed along the apical half of the stem, coriaceous, bilobed, with an evident dorsal keel, about 4-5 times longer than wide. **Inflorescence** apical, racemose to pluriracemose, producing one flower at a time, and flowering over several years. **Floral bract** much shorter than the ovary. **Ovary** terete, not inflated, smooth, about 3 times longer than the sepals. **Flowers** one at a time, successive, resupinate, no color notes available. **Sepals** partly spreading, elliptic, acuminate, 9-veined, margin entire, spreading; the lateral sepals somewhat oblique. **Petals** partly spreading, rhombic, oblique, acute, 3-veined, with numerous secondary veins and thus appearing 5 or more-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, base cordate; bicallose, the calli laminar, prominent, divergent; disc with a prominent keel that runs to the apex of the midlobe; lateral lobes transversely elliptic, entire; midlobe short, slightly surpassing the lateral lobes, subquadrate, the apex triangular, obtuse. **Column** straight, dilated towards the apex. **Clinandrium-hood** reduced, margin dentate.

OTHER SPECIMENS: None seen.

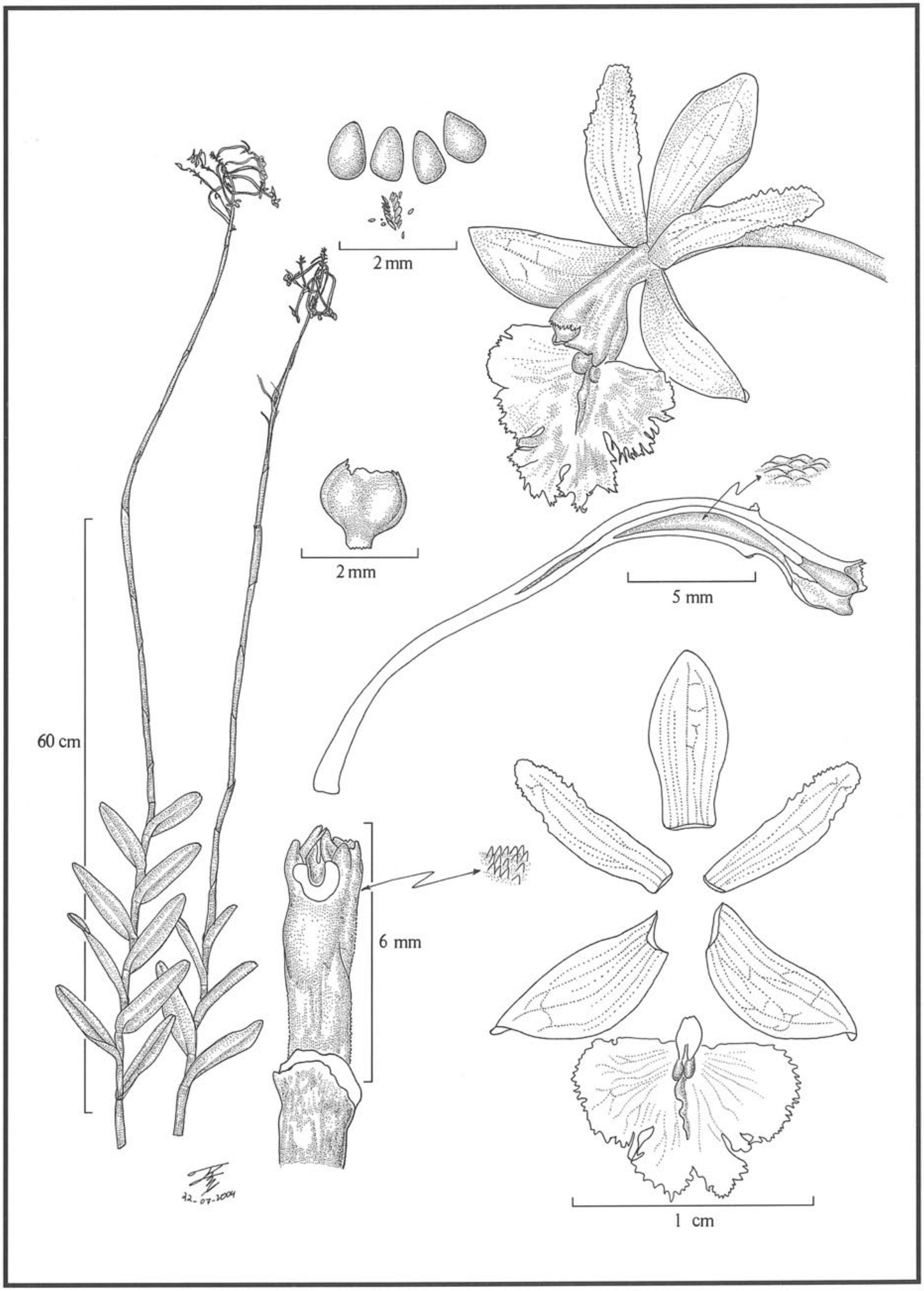
DISTRIBUTION AND ECOLOGY: Known only from northern Nicaragua, Department of Nueva Segovia; epiphytic at 1220 m altitude. Flowering in December.

RECOGNITION: *Epidendrum ocotalense* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, has cane-like, non-thickened stems, short, racemose or pluri-racemose inflorescence, without spathaceous bracts, usually large, star-shaped flowers, with similar sepals and petals, and usually successive flowers; the flowers are mostly indistinguishable in shape. The species can be recognized by the relatively short plants, stems and leaves reddish, floral segments small and relatively wide, partly spreading (sepals 15-18 mm long, petals 12-13 mm long), petals rhombic, lip 3-lobed, midlobe very short (3.0 x 2.8 mm), subquadrate, the apex triangular, obtuse, only slightly surpassing the lateral lobes. It is very similar to *Epidendrum buenaventurae* F.Lehm. & Kraenzl. but that species has larger, spreading, flowers (sepals 25-46 mm), linear-lanceolate petals, the lateral lobes of the lip ovate-triangular, acute to rounded, with numerous thickened veins, and a linear-lanceolate, long, midlobe (23-45 mm), rare along the Pacific slope of Mesoamerica to western Colombia. *Epidendrum eburneum* Rchb.f. has green leaves, long, spreading sepals (26-46 mm), linear-lanceolate, acuminate petals, and a suborbicular, apiculate lip, rarely with a short sinus on each side of the apicule; found along the Caribbean coast from Honduras to Panama. *Epidendrum nocturnum* Jacq. has terete stems, green leaves, long, spreading sepals (40-70 mm long), linear-acuminate petals, and a deeply 3-lobed lip, with a long, linear, acuminate midlobe; widespread throughout the neotropics.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to Ocotal, the capital of the department of Nueva Segovia, Nicaragua, near where the type was collected.



EPIDENDRUM ODONTOPETALUM Hágsater | **Plate 1150**

EPIDENDRUM ODONTOPETALUM Hágsater, *sp. nov.*

Type: BOLIVIA: La Paz: Sud Yungas; Basin of Río Bopi, San Bartolomé (near Calisaya), 750-900 m, 1-22 July 1939, ***B. A. Krukoff 10550***. Holotype: NY! (Illustration voucher). Isotypes: AMES! FI! G! K! S! U! UC!

Epidendro calantho Rchb.f. & Warsc. simile sed plantis altissimis, floribus roseis cum callis luteis, labello integro usque trilobato, petalorum marginibus superis dentatis, recedit.

Hierba terrestre, simpodial, cespitosa, erecta, hasta de 4 m de alto. **Raíces** basales, carnosas, delgadas. **Tallos** sencillos, tipo caña, teretes, rectos, de más de 250? x 0.6-0.8 cm. **Hojas** numerosas, 9-17 o más, alternas, distribuidas a lo largo de los 2/3 apicales del tallo; vaina tubular, finamente estriada, 1.7-5 x 0.6-0.8 cm; lámina coriácea, lisa, oblongo elíptica, ápice redondeado, desigualmente bilobado, margen entero, 5.5-12 x 1.4-2.6 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, erecta, racemosa, elongada, 60-100? cm de largo, produce racimos sucesivos; pedúnculo alargado, terete, delgado, 55-60 cm de largo, cubierto casi en su totalidad por 8-10 vainas tubulares, agudas, finamente estriadas, 3.5-8 x 0.15-0.5 cm; raquis terete, 4-17 cm de largo. **Flores** 16-60, sucesivas, 5-6 abiertas a la vez, resupinadas, color rosado, callos amarillos; fragancia no registrada. **Brácteas florales** más cortas que el ovario, linear triangular, acuminadas, 2-2.5 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 15-37 mm de largo. **Sépalos** extendidos, libres, angostamente elípticos, agudos, con una quilla dorsal pequeña, 7-nervados, margen extendido y entero, 7.5-10 x 3.0-3.5 mm; los **laterales** oblicuos. **Pétalos** extendidos, libres, angostamente elíptico oblongos, redondeados, rectos, 3-nervados, las nervaduras laterales ramificadas cerca la base dando la apariencia de ser 5 o 6 nervados; margen extendido, eroso dentado en la mitad apical, 8 x 2 mm. **Labelo** unido a la columna, trilobado a entero, semiorbicular, base truncada, margen dentado, 6.5 x10 mm; bicalloso, los callos cortos, disco provisto de una quilla intercallosa larga, sinuosa, desvaneciéndose antes de llegar a seno apical; lóbulos laterales redondeados, el margen basal recto, entero, 4 x 4 mm; lóbulo medio obcuneado, profundamente bilobado, seno profundo, 3 x 5 mm. **Columna** recta, el clinandrio suberecto, delgada, obcónica en el ápice, ápice bidentado, 6 mm de largo. **Clinandrio** corto, dentado. **Antera** subesférica, papilosa, ápice truncado, finamente dentado, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas más largas que los polinios, formadas por tétradas en forma de tejas apiladas. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/2 del largo de la cavidad estigmática. **Nectario** penetrando 1/4 del ovario, finamente papiloso. **Cápsula** provista de un pedicelo y cuello apical largos.

Tall, terrestrial, sympodial, caespitose, erect, **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, terete, straight, tall. **Leaves** numerous, distributed throughout the apical 2/3 of the stems, sheath tubular, minutely striated; blade coriaceous, smooth, oblong-elliptic, apex rounded, unequally bilobed, margin entire. **Inflorescence** apical, racemose, elongate; peduncle elongate, terete, thin, covered nearly totally by acute, tubular, sheaths; rachis terete; produces successive racemes. **Flowers** 16-60, successive, 5-6 open at one time, resupinate, pink, calli yellow. **Floral bracts** shorter than the ovary, the lower ones sometimes half as long as the ovary, progressively shorter, linear-triangular, acuminate. **Ovary** terete, thin, smooth. **Sepals** spreading, free, narrowly elliptic, acute, with a small dorsal keel, 7-veined, margin spreading and entire, the **laterals** oblique. **Petals** spreading, free, narrowly elliptic-oblong, rounded, straight, 3-veined, the lateral veins branched so as to appear 5- or 6-veined; margin spreading, erose-dentate above the middle. **Lip** united to the column, 3-lobed to entire, base truncate, margin dentate; bicallose, the calli short, with an intermediate, sinuous keel that runs short of the apical sinus; lateral lobes semiorbicular, the posterior margin rounded, entire, midlobe semiorbicular in outline, the basal lobes rounded, the midlobe deeply bilobed, with a deep sinus; the midlobe somewhat smaller. **Column** straight, the clinandrium hood somewhat upturned. **Clinandrium hood** short, dentate. **Anther** ovate, apically truncate, minutely dentate 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles longer than the pollinia, formed by tetrads which appear as stacked roof-tiles. **Rostellum** subapical, slit. **Nectary** penetrating 1/4 of the ovary, minutely papillose.

OTHER SPECIMENS: BOLIVIA: Cochabamba: Chapare, Cristal Maya, 480 m, 20 VII 1980, *Vásquez 37*, SEL x2! **La Paz:** Inquisivi; ca 8-12 km N of Licoma Pampa, 2350-2600 m, 21-22 II 1989, *Marko Lewis 35269*, MO!

OTHER RECORDS: BOLIVIA: Cochabamba: Chapare, Cristal Maya 480 m, 20 VII 1980 *Vásquez 37*, xerox Illustr. AMO!

DISTRIBUTION AND ECOLOGY: Apparently widespread along the Amazonian slope of the Andes in Bolivia, terrestrial, from 480 to 2600 m altitude. Flowering from July to February.



RECOGNITION: *Epidendrum odontopetalum* belongs to the Calanthum Subgroup of the Secundum Group which is characterized by the caespitose habit, simple, terete, stems, numerous, oblong-elliptic, bilobed, leaves, mostly elongate inflorescence, with a raceme of successive flowers, the lip with two calli and a prominent, flexuous keel. The species is recognized by the very tall plants, resupinate, pink flowers flowering in succession, several open at one time, the calli yellow, the lip is suborbicular in outline, truncate at the base, from entire to 3-lobed, the margin dentate, and the oblong petals have the apical half of the margin dentate-erose. It closely resembles *Epidendrum calanthum* which has very similar pink-purple to white flowers with a straight column and larger, prominent calli; it's range extends to both sides of the Andes (Pacific and Amazonian slope) from sea-level to about 1500 m altitude; the plants are not as tall.

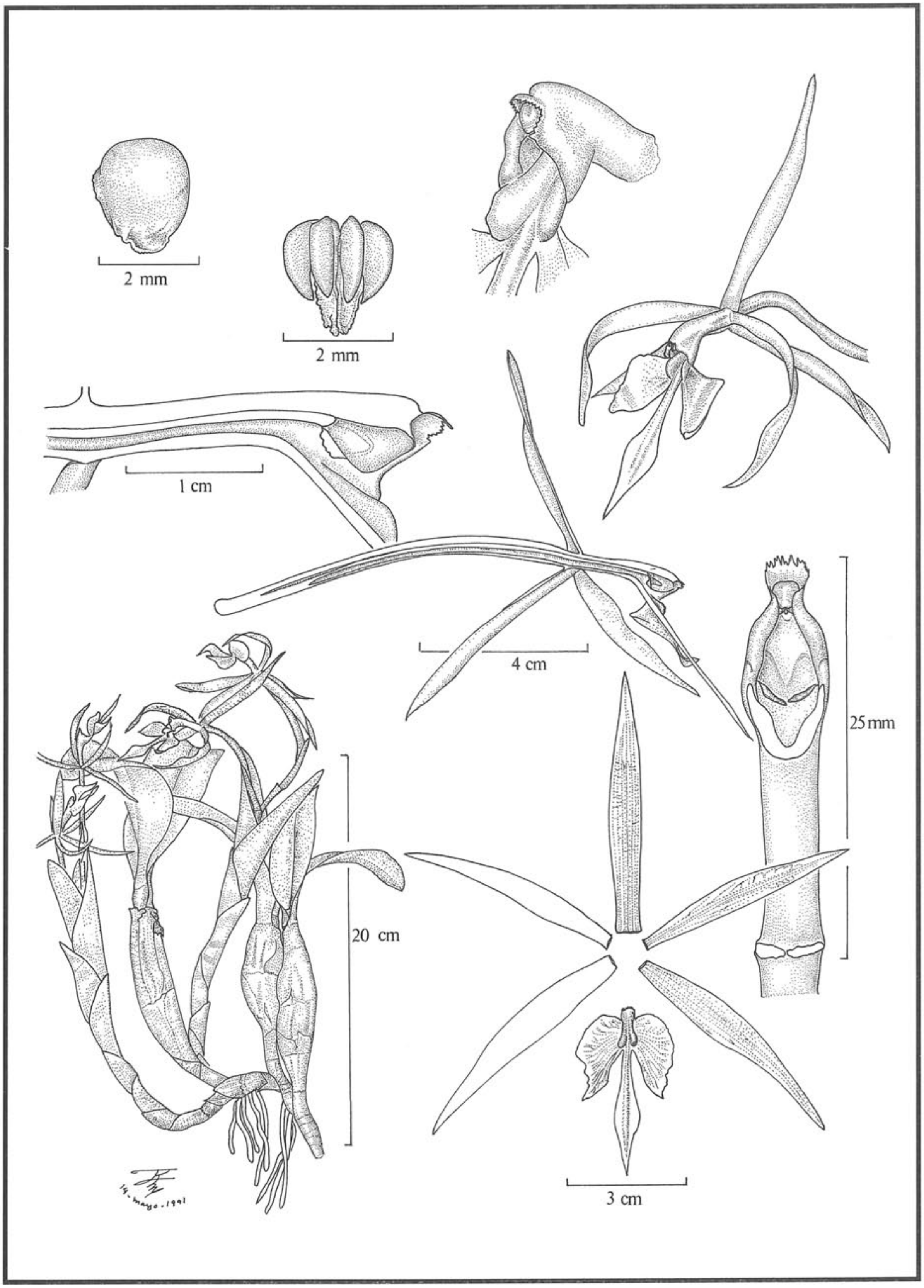
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek, οδοντος, tooth, and πεταλον, petal, in reference to the dentate petals.

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Editors: E. Hágsater & L. Sánchez S.



EPIDENDRUM OERSTEDII Rchb.f.

Plate 1151

EPIDENDRUM OERSTEDII Rchb.f., Bot. Zeitung (Berlin) 10: 937. 1852.

Type: COSTA RICA: San Miguel, ***Oersted s.n.*** Holotype: W 52121! Tracing by Schlechter, AMES 26009!

Synonyms: *Epidendrum ciliare* L. var. *oerstedii* (Rchb. f.) L.O. Williams, Flora of Panama: Ann. Missouri Bot. Gard. 33(4): 327. 1946.

Coilostylis oerstedii (Rchb.f.) Withner & Harding, The Cattleyas and their relatives: The Debatable Epidendrums, pg. 145. 2004.

Epidendrum costaricense Rchb.f., Bot. Zeitung (Berlin) 10: 937. 1852. Type: NICARAGUA: Chinandega: Volcán San Cristóbal, as "El Viejo Costarica", ***Oersted s.n.*** Holotype: W 52128!

Epidendrum umlaufti Zahlbr., Wiener Ill. Gart.-Zeitung 18: 209. 1893. Type: Hort. Schoenbrunn. Lectotype (here designated): illustration, Wiener Ill. Gart. Zeitung 18: t. 2. 1893.

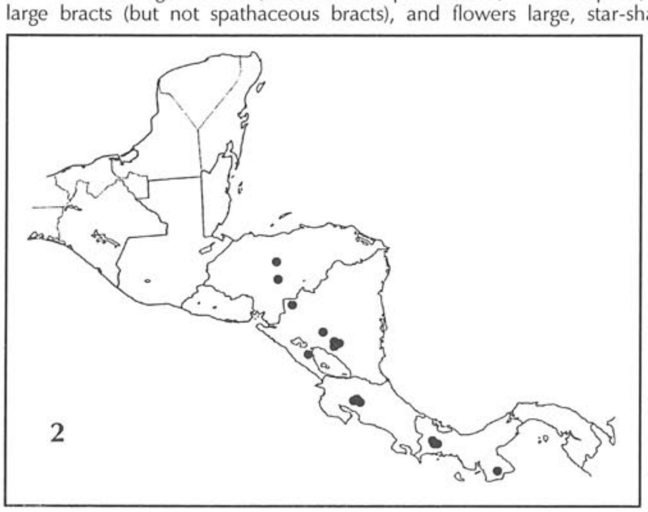
Hierba epífita, simpodial, subcespitosa, 20-35 cm. **Raíces** basales, carnosas, 1-2 mm de grosor. **Tallos** engrosados formando un seudobulbo fusiforme, heteroblástico, recto, 7-16 x 0.5-1.3 cm. **Hojas** 1 ó 2, distribuidas en el ápice del seudobulbo, coriáceas; lámina ovado elípticas, ápice redondeado a retuso, 4-11 x 1.8-3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida del tallo inmaduro, racemosa, 13-18.5 cm de largo; pedúnculo lateralmente comprimido, 2.5-5.5 cm de largo; cubierto por 1-2 brácteas, imbricadas, oblongo triangulares, obtusas, envolventes; raquis terete, delgado, recto a ligeramente sinuoso. **Brácteas florales** de la mitad de la longitud del ovario, conduplicadas, oblongas, obtusas, 2.5-5 cm de largo. **Ovario** terete, no inflado, no ornamentado, 50-75 x 0.7-1.3 mm. **Flores** 2-5, simultáneas, resupinadas, los sépalos y pétalos verdes, el labelo y columna blanco, callo amarillo; fragancia débil, a jazmín, por la tarde. **Sépalos** extendidos, linear lanceolados, acuminados, 12-nervados, con varias nervaduras secundarias, margen entero, revoluto, 40-65 x 3-10 mm. **Pétalos** descendentes, linear lanceolados, acuminados, 7-nervados con numerosas nervaduras secundarias, margen entero, revoluto, 40-65 x 2-7 mm. **Labelo** unido a la columna, trilobado, base ligeramente cordada, 25-43 x 17-25 mm; bicalloso, los callos laminares, prominentes; disco con numerosas nervaduras evidentes cuando seco y con una carina baja la cual se prolonga hasta cerca del ápice del lóbulo medio; lóbulos laterales obovados, agudos a redondeados, el margen entero, 13-24.5 x 4-10 mm; lóbulo medio linear lanceolado, acuminado, ensanchado cerca de la mitad, margen entero, 25-33 x 4-8.5 mm. **Columna** recta a ligeramente arqueada, 15-20 mm de largo. **Clinandrio** prominente, margen dentado. **Antera** ovoidea, 4-locular. **Polinios** 4, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando 1/2 de la cavidad estigmática. **Nectario** profundo, penetrando 2/3 del ovario, delgado, liso. **Cápsula** elipsoide, pedicelo 0.8 x 0.3 cm, cuerpo ocupando casi la mitad de su longitud, localizado en la mitad basal, 3.3 x 0.6 cm, cuello apical 2.5 x 0.1 cm.

Epiphytic, sympodial, subcaespitose **herb. Roots** basal, fleshy, thick. **Stems** thickened, forming a fusiform, heteroblastic, straight pseudobulb. **Leaves** 1-2, aggregate towards the apex of the pseudobulb, coriaceous; blade ovate-elliptic, apex rounded to retuse. **Inflorescence** apical, racemose, erect, produced from the immature stem; peduncle laterally compressed, covered by 1-2 imbricating bracts, oblong-triangular, obtuse, amplexicaul; rachis terete, thin, straight to slightly sinuous. **Floral bracts** half as long as the ovary, conduplicate, oblong, obtuse. **Ovary** terete, no inflated, smooth, long. **Sepals** spreading, linear-lanceolate, acuminate, 12-veined, with several secondary veins, margin entire, revolute. **Petals** descending, linear-lanceolate, acuminate, 7-veined with numerous secondary veins, margin entire, revolute. **Lip** united to the column, 3-lobed, base slightly cordate; bicallose, the calli laminar, prominent, disc with numerous evident veins when dry, and a low thickened keel reaching near the apex of the midlobe; lateral lobes obovate, acute to rounded, margin entire; midlobe linear-lanceolate, acuminate, widened towards the middle, margin entire. **Column** straight to slightly arching, long. **Clinandrium-hood** prominent, margin dentate. **Anther** ovoid, 4-celled. **Pollinia** laterally compressed, caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** deep, penetrating 2/3 of the ovary, thin, smooth. **Capsule** ellipsoid, pedicel short, body occupying nearly half the total length, and located at the basal third; apical neck long, nearly as long as the body itself.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging from Honduras, Nicaragua, Costa Rica and central Panama, mainly along the Pacific slope, at 300-1600 m altitude, in seasonally wet forest. Flowering from April to September.

RECOGNITION: *Epidendrum oerstedii* belongs to the Coilostylis Group which is characterized by the sympodial, caespitose plants, the stems forming a fusiform, heteroblastic pseudobulb, with an apical, racemose, distichous inflorescence, the peduncle covered by large bracts (but not spathaceous bracts), and flowers large, star-shaped, with long, narrow sepals and petals. The species is recognized by the inflorescence which is produced from the young, immature stem, the leaves in early development, the 2-5-flowered distichous inflorescence with prominent bracts, sepals and petals 40-65 mm long, and the 3-lobed lip with the margin of the lateral lobes entire, and the midlobe of the lip widened in the middle. It is similar to *E. ciliare* L., the wide-ranging species, has 2-13 flowers, the outer margin of the lateral lobes deeply fimbriate, and the midlobe-linear, not widened. *Epidendrum falcatum* Lindl. has similar flowers, but a very different habit, with a single, long, succulent, acute, arching leaf, and a very short, racemose inflorescence. *Epidendrum purpurascens* Focke has long, narrow, subcoariaceous leaves, on a much thinner, yet fusiform pseudobulb, sepals 13-25 mm long, and the midlobe of the lip widened towards the apex.

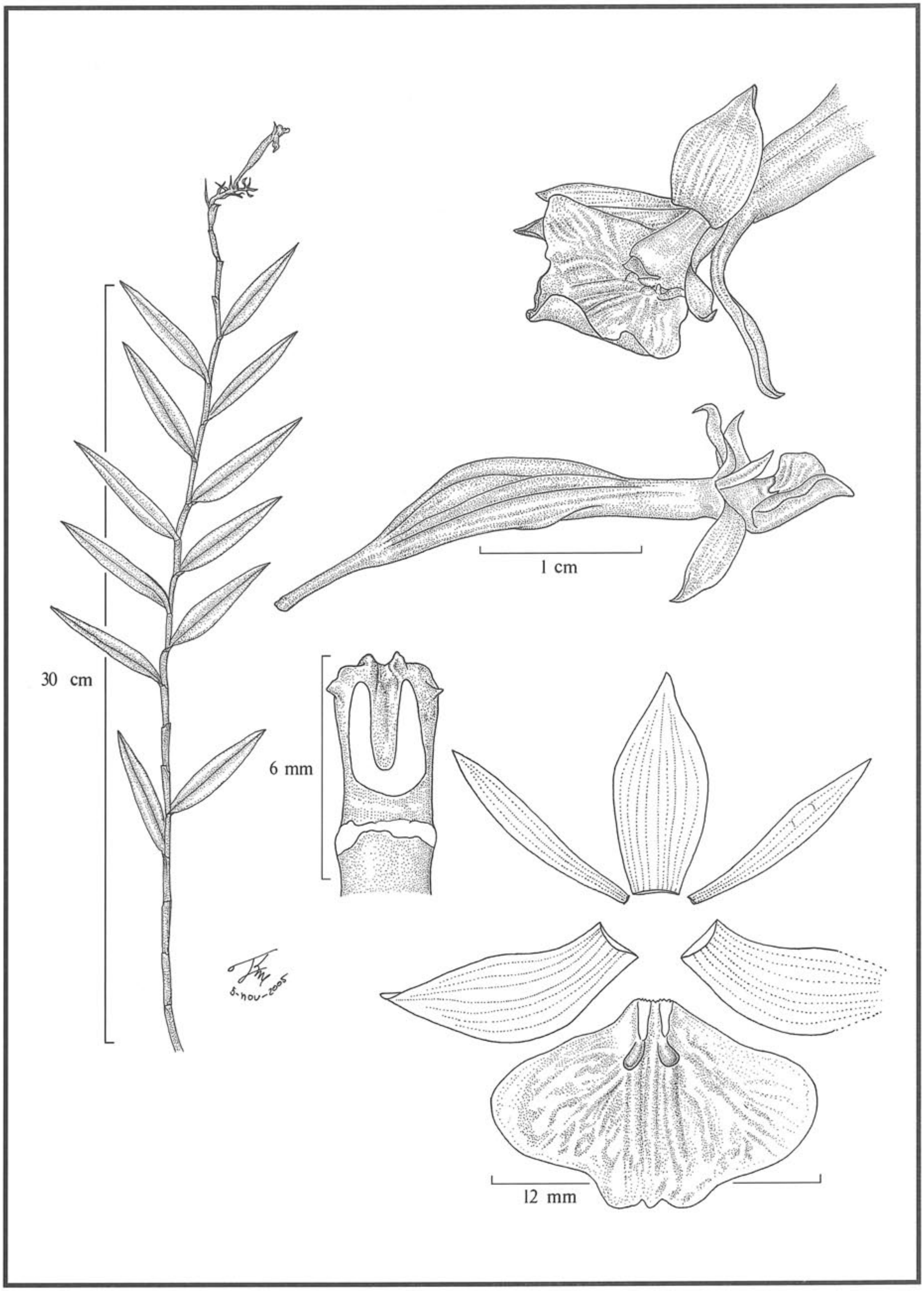


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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of A. Oersted, Danish botanist who explored Central America in the XIX century.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM PACHYRACHIS Ames Plate 1152

EPIDENDRUM PACHYRACHIS Ames, Schedul. Orchid. 2: 32. 1923.

Type: GUATEMALA: Izabal: Jocolo [Jacoló], 150 ft?, 10 April 1920, ***Harry Johnson 305***. Holotype: AMES! Isotype: UCLA!

Synonym: *Epidendrum alfredii* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 115. 1923. Type: COSTA RICA: [Limón:] Finca Hundrisser, im atlantischen Küstengebiet, August 1909, ***A. C. Brade 1271***. Holotype: B, destroyed, Tracing of plant and floral details: AMES 31579!

Hierba epífita, simpodial, cespitosa, erecta, de 36-120 cm de alto. **Raíces** basales, blanquecinas, carnosas, 2 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, 32 x 0.2-0.5 cm. **Hojas** 15-20, distribuidas a lo largo del tallo, articuladas, dísticas; vainas tubulares, finamente estriadas y rugosas, 8-27 mm de largo; lámina lanceolada a elíptico lanceolada, aguda, diminutamente apiculada, coriácea, la superficie ventral con la nervadura central prominente y claramente marcada, margen entero, algo revoluto cuando seco, 3-7 x 0.6-1.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, sucesiva y entonces pluriracemosa, (originando el nuevo racimo a partir un mismo pedúnculo), nutante, densa, corta, 2-8 cm de largo; pedúnculo terete, recto, corto, 7-12 mm de largo; oculto en su totalidad por 2 brácteas prominentes, anchamente triangulares, acuminadas, amplexicaulas, 10-13 mm de largo; raquis recto, prominentemente engrosado. **Brácteas florales** más cortas que el ovario, anchamente triangulares, agudas a acuminadas, abrazadoras, 3-8 mm de largo. **Ovario** terete, algo inflado en los 2/3 apicales, sulcado, 6-10 mm de largo. **Flores** 9-18 por racimo, sucesivas, resupinadas, muy carnosas, de color verde; sin datos de fragancia. **Sépalos** libres, agudos, diminutamente apiculados, 7-nervados, los márgenes enteros, extendidos; el **dorsal** entreabierto, ligeramente recurvado, obovado elíptico a elíptico, 6.3-8 x 3.2-3.5 mm; los **laterales** extendidos, elípticos a oblongo elípticos, oblicuos, 7.8-8.5 x 3.2-4.5 mm. **Pétalos** entreabiertos, linear elípticos o angostamente subrómbicos, agudos, 3-nervados, oblicuos, margen entero, extendido, 6-8.4 x 1.2-1.9 mm. **Labelo** unido a la columna, subentero, generalmente cuneado en la base, en aspecto general transversalmente elíptico a subreniforme, el ápice formando un corto e incipiente lóbulo medio bilobado, retuso, apiculado, cada lóbulo pequeño y redondeado, margen subentero, extendido, 5.2-7.3 x 9.5-12 mm; bicalloso, los callos prominentes, laminares, algo lateralmente aplanados; disco provisto de tres quillas centrales, carnosas, paralelas, alargadas hasta el ápice de la lámina y dos pares de venas en engrosadas, cortas, ubicadas a cada lado de las quillas. **Columna** recta, gruesa, con un diente apical a cada lado, 3.5-5 mm de largo. **Clinandrio** prominente (aunque sin sobrepasar el ápice del cuerpo de la columna), margen entero. **Antera** obovoide, 4-locular. **Polinios** 4, obovoides, algo lateralmente aplanados, desiguales en tamaño (el par interior ligeramente más corto); caudículas suaves y granulosas, casi del mismo largo que los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** probablemente penetrando 2/3 del ovario, inflado a todo lo largo del mismo. **Cápsula** (inmadura) angostamente elipsoide; pedicelo terete, 6 mm de largo; cuerpo 22 x 4.5 mm; cuello apical, con el perianto persistente, 8 mm de largo.

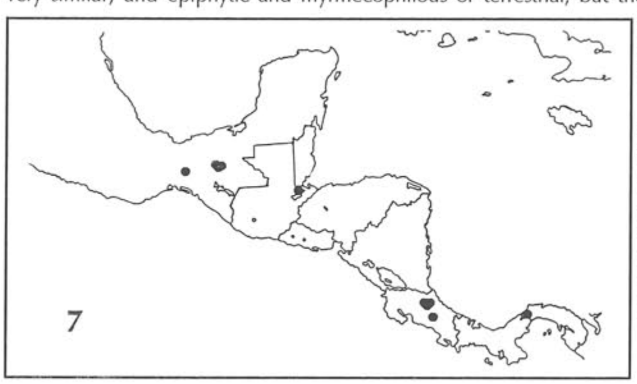
Epiphytic, sympodial, caespitose erect **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete, straight. **Leaves** 15-20, distributed throughout the stem, articulate, distichous; sheaths tubular, minutely striated and rugose; blade lanceolate to elliptic-lanceolate, acute, minutely apiculate, coriaceous, the ventral surface with a prominent, clearly marked central vein, margin entire, somewhat revolute when dry. **Spathaceous bract** absent. **Inflorescence** apical, racemose, successive and then pluriracemose (the new racemes originating from the same peduncle), nutant, short, dense-flowered; peduncle terete, straight, short, hidden by two prominent, widely triangular, acuminate, amplexicaul bracts; rachis straight, prominently thickened. **Floral bracts** shorter than the ovary, widely triangular, acute to acuminate, amplexicaul. **Ovary** terete, somewhat inflated along the apical 2/3, sulcate, short. **Sepals** free, acute, minutely apiculate, 7-veined, the margins entire, spreading; the dorsal sepal partly spreading, slightly recurved, obovate-elliptic, to elliptic; lateral sepals spreading, elliptic, oblique. **Petals** partly spreading, linear elliptic or narrowly subrhombic, acute, 3-veined, oblique, margin entire, spreading. **Lip** united to the column, subentire, base generally cuneate, transversely elliptic to subreniform in outline, the retuse, apiculate apex forming a pair of small, shallow, rounded lobules, margin subentire, spreading; bicallose, the calli prominent, laminar, somewhat laterally flattened; disc provided with three parallel central, fleshy keels which reach the apex of the lip, and a pair of short, thickened veins on each side of the keels. **Column** straight, thick, with an apical tooth on each side. **Clinandrium-hood** prominent (without surpassing the apex of the body) margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, obovoid, somewhat laterally flattened, unequal, the inner pair slightly smaller; caudicles soft and granulose, nearly as long as the pollinia. **Rostellum** subapical, slit. **Nectary** probably penetrating 2/3 of the ovary, inflated throughout. **Capsule** (immature) narrowly ellipsoid, pedicel short, apical neck short, with persistent perianth.

OTHER SPECIMENS: MEXICO: Oaxaca: Santa María Chimalapa, ca. 7.5 km al N de Sta. María por la vereda a la cabecera del Río Verde, 300 m, *Hernández 1149*, CHAPA x2 **Tabasco:** Teapa, Arroyo Mojoshpa, a 3 km del CRUSE-UACH, 6 V 1998, *Guadarrama 95.5.82*, MEXU! Teapa, Puyacatengo, Vicente Guerrero Lerma, 22 VIII 1990, *Ramón 392*, MEXU! Teapa, 24 IV 1996, *Ortíz s.n.*, MEXU! **COSTA RICA: Limón:** Las Colonias-Guápiles, 300 m, 17 IV 1941, *León 654*, CR! F! (Illustration voucher). **PANAMA: Colón:** Santa Rita lumber road, pressed cult. 8 IV 1968, *Dressler 3473*, Herb. Dressler!

OTHER RECORD: COSTA RICA: San José: Pérez Zeledón, Hort. San Isidro del General, *Fonseca sub Hágsater 8261*, color photo, in M. Soto et al., 2007, Orchids of Mexico, Digital Catalogue: fig. 0380, México, Instituto Chinoín.

DISTRIBUTION AND ECOLOGY: Ranging from the Isthmus of Tehuantepec in Mexico and the Caribbean lowlands of Costa Rica and Panama. Epiphytic, myrmecophilous, at around 300 m altitude. Flowering in April to August.

RECOGNITION: *Epidendrum pachyrachis* belongs to the Smaragdinum Group which is characterized by the, caespitose, sympodial habit, with numerous coriaceous leaves, the surface parchment-like when dry, the rachis thickened and small, successive, basically green flowers. The species is recognized by the lanceolate to lanceolate-elliptic leaves, the short inflorescence, with up to 18 successive, very fleshy, green flowers, the lip transversely elliptic to reniform, with radiating thickened veins at the truncate base, and three elongate central keels, the column short and bidentate at the apex. The South American *Epidendrum smaragdinum* Lindl. is vegetatively very similar, and epiphytic and myrmecophilous or terrestrial, but the flowers are green, spotless, with the lip clearly 3-lobed, the midlobe entire and apiculate. The terrestrial or lithophytic *Epidendrum orchidiflorum* Salzm. has much taller plants, up to 2.5 m tall, with a very long peduncle of the inflorescence, the flowers greenish with brown to purple dots, the lip clearly 3-lobed, with the midlobe deeply emarginate.

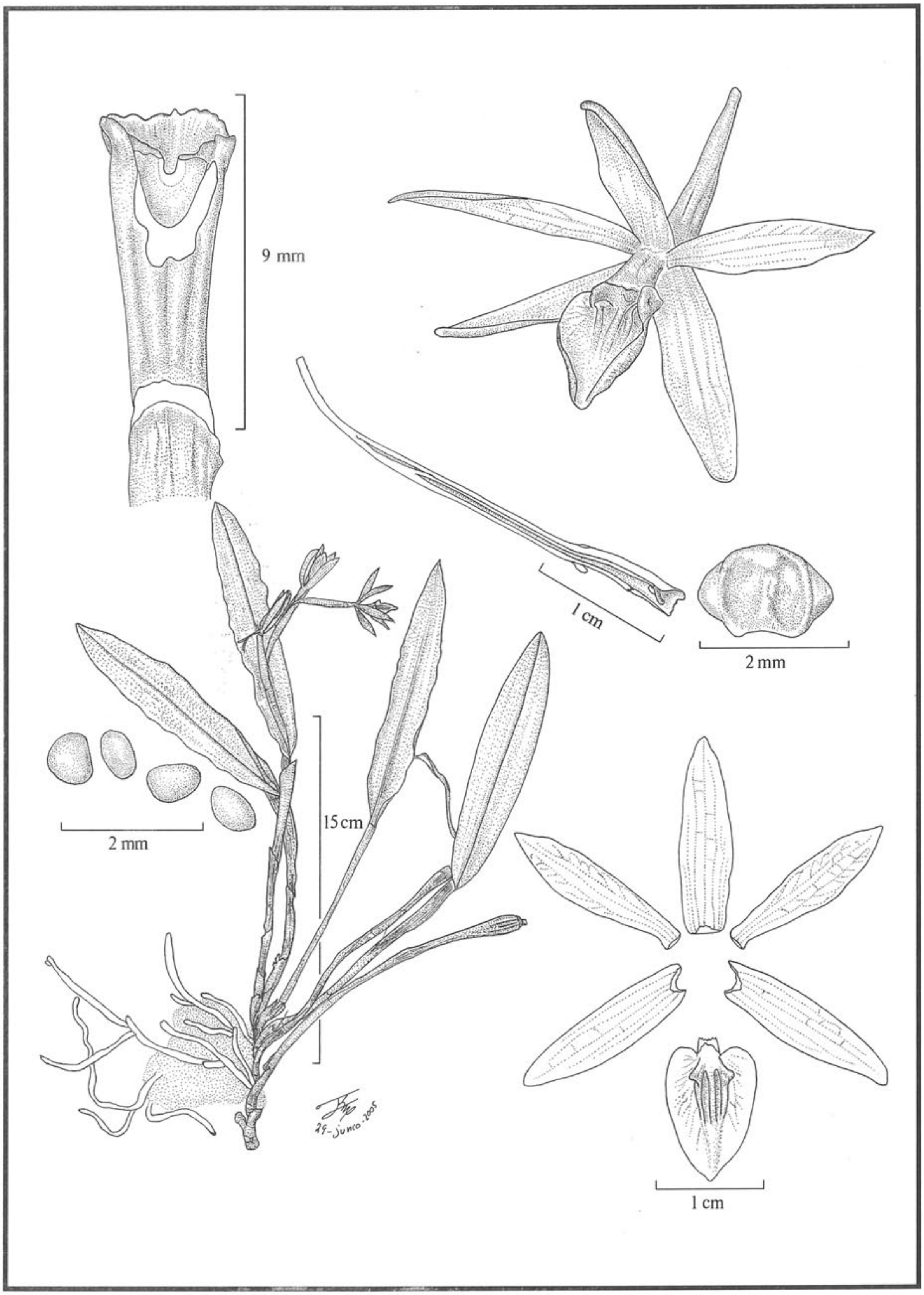


CONSERVATION STATUS: DD. Data deficient. Herbarium material is very scarce.

ETIMOLOGY: from the Greek παχυς, thick, stout, and ραχις, backbone, midrib, in reference to the thickened rachis of the inflorescence.

REFERENCE: Ames, O., F.T. Hubbard, and C. Schweinfurth, 1936. **The Genus *Epidendrum* in the United States and Middle America**, Botanical Museum, Cambridge, Massachusetts, pg. 140.

Author: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM PALLENS Rchb.f.

Plate 1153

EPIDENDRUM PALLENS Rchb.f., Beitr. Orchid.-K. C. Amer. 82. 1866.

Type: COSTA RICA: [Alajuela:] Vulkan de Barba, 9000 ft, 11 July 1857, ***Wendland s.n.*** Holotype: W 51101! tracing AMES 25248!

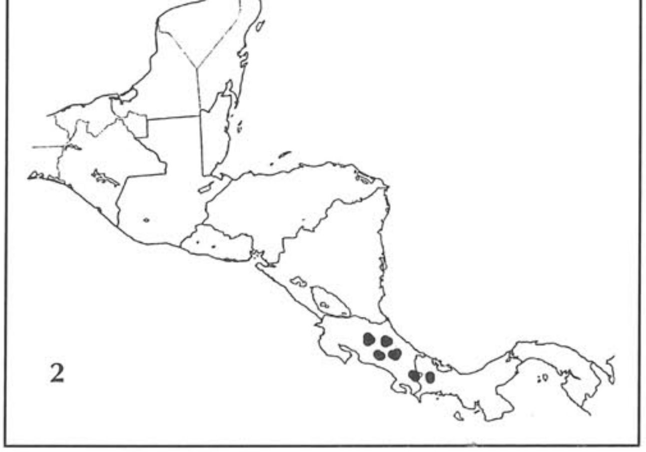
Hierba epífita o raramente terrestre, simpodial, cespitosa, 20-33 cm de alto. **Raíces** basales, delgadas, blancas, 1-3 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, ancipitosos, delgados en la base y ligeramente engrosados hacia el ápice, ligeramente arqueados, 6-12.5 x 0.13-0.8 cm; cubiertos por vainas (no foliares), tubulares, algo ancipitosas, ligeramente infladas en el ápice sin llegar a ser infundibuliformes, escariosas y fibrosas con el tiempo, 10-50 mm de largo. **Hojas** 1-2, agregagadas en el ápice del tallo, articuladas, alternas, ascendentes; vainas tubulares, ancipitosas, 8-15 x 3.5-5.5 mm; lámina angostamente lanceolada a oblongo elíptica, aguda, coriácea, margen entero, 7.5-15 x 1-3.4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, con las flores alternas, pauciflora, laxa, arqueada, 9-20 cm de largo; pedúnculo delgado, ancipitoso, recto, más corto que la hoja apical, 3-12.5 cm de largo; provisto de 1 a 2 brácteas tubulares, agudas, escariosas y fibrosas, 3.5-5 cm de largo; raquis ancipitoso, recto a raramente algo flexuoso. **Brácteas florales** prominentes, más largas que el ovario, tubulares en la base, agudas, amplexicaules, 24-43 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 25-36 mm de largo. **Flores** 2-6, simultáneas, resupinadas, de color pardo oliváceo a lila-rosado, en ocasiones con la base de los segmentos florales verdosa, sin datos de fragancia. **Sépalos** entreabiertos, libres, carnosos, oblongo lanceolados, agudos, 5-nervados, en ocasiones las nervaduras laterales ramificadas desde la base dando la impresión de ser 7-nervados, margen entero, 18-24 x 4-6 mm. **Pétalos** entreabiertos, libres, carnosos, angostamente elípticos, agudos, 3-nervados, las nervaduras laterales cortamente ramificadas a todo lo largo, margen entero, 18-22 x 3-5 mm. **Labelo** unido a la columna, entero, triangular ovado, auriculado en la base, agudo en el ápice, margen subentero, proporcionalmente 2 veces más largo que ancho, 14-17 x 8-10 mm; bicalloso, los callos prominentes, laminares, disco con 3 quillas delgadas y bajas (cuyo ápice se une formando una sola quilla carnosa y engrosada alargada hasta el ápice de la lámina), tetracuniculado y con un par de engrosamientos laminares debajo de los callos. **Columna** recta, delgada, 8-9 mm de largo. **Clinandrio** prominente (sobrepasando ligeramente el ápice de la columna), carnoso, margen crenulado. **Antera** reniforme, 4-locular. **Polinios** 4, sublenticulares, lateralmente comprimidos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, de menos de ½ del largo de la cavidad estigmática. **Nectario** penetrando cerca de la mitad del ovario, delgado, no inflado, liso. **Cápsula** elipsoide; pedicelo 3-7 mm de largo; cuerpo 20-29 x 7-17 mm; cuello apical 9-12 mm de largo.

Epiphytic or rarely terrestrial, sympodial, caespitose **herb. Roots** basal, thin, white. **Stems** simple, cane-like, laterally compressed, ancipitose, thin at the base, slightly thickened towards the apex, slightly arching, covered by non-foliaceous, somewhat ancipitose, sheaths, slightly inflated towards the apex, scarious, becoming fibrous with time. **Leaves** 1-2, aggregate at the apex of the stem, articulate, alternate, ascending; sheaths tubular, ancipitose; blade narrowly lanceolate to oblong-elliptic, acute, coriaceous, margin entire. **Inflorescence** apical, flowering only once, racemose, alternate, lax, few-flowered, arching; peduncle thin, ancipitose, straight, shorter than the apical leaf, provided with 1-2 tubular, acute, scarious, fibrous bracts. **Floral bracts** prominent, longer than the ovary, tubular at the base, acute, amplexicaul. **Ovary** terete, thin, not inflated, smooth. **Flowers** 2-6, simultaneous, resupinate, olive-brown to pink-lilac, the base of the floral segments sometimes greenish. **Sepals** partly spreading, free, fleshy, oblong-lanceolate, acute, 5-veined, the lateral veins sometimes branching from the base so as to appear 7-veined, margin entire. **Petals** partly spreading, free, fleshy, narrowly elliptic, acute, 3-veined, the lateral veins short branched throughout, margin entire. **Lip** united to the column, entire, triangular-ovate, base auriculate, apex acute, margin subentire, proportionately twice longer than wide; bicallose, the calli prominent, laminar, disc with 3 thin, low keels (united at the apex to form a single, fleshy, thickened keel reaching the apex of the blade), 4-cuniculate, with a pair of thickened blades bellow the calli. **Column** straight, thin. **Clinandrium-hood** prominent, fleshy, slightly surpassing the apex of the column, margin crenulate. **Anther** reniform, 4-celled. **Pollinia** 4, sublenticular, laterally compressed. **Rostellum** apical, slit. **Nectary** penetrating nearly half of the ovary, thin, not inflated, smooth. **Capsule** ellipsoid, with a very short pedicel, and a medium sized apical neck.

OTHER SPECIMENS AND OTHER RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Endemic to Costa Rica and western Panama, epiphytic or rarely terrestrial, from 1400-3400 m altitude. Flowering from March to December, mainly from May to August.

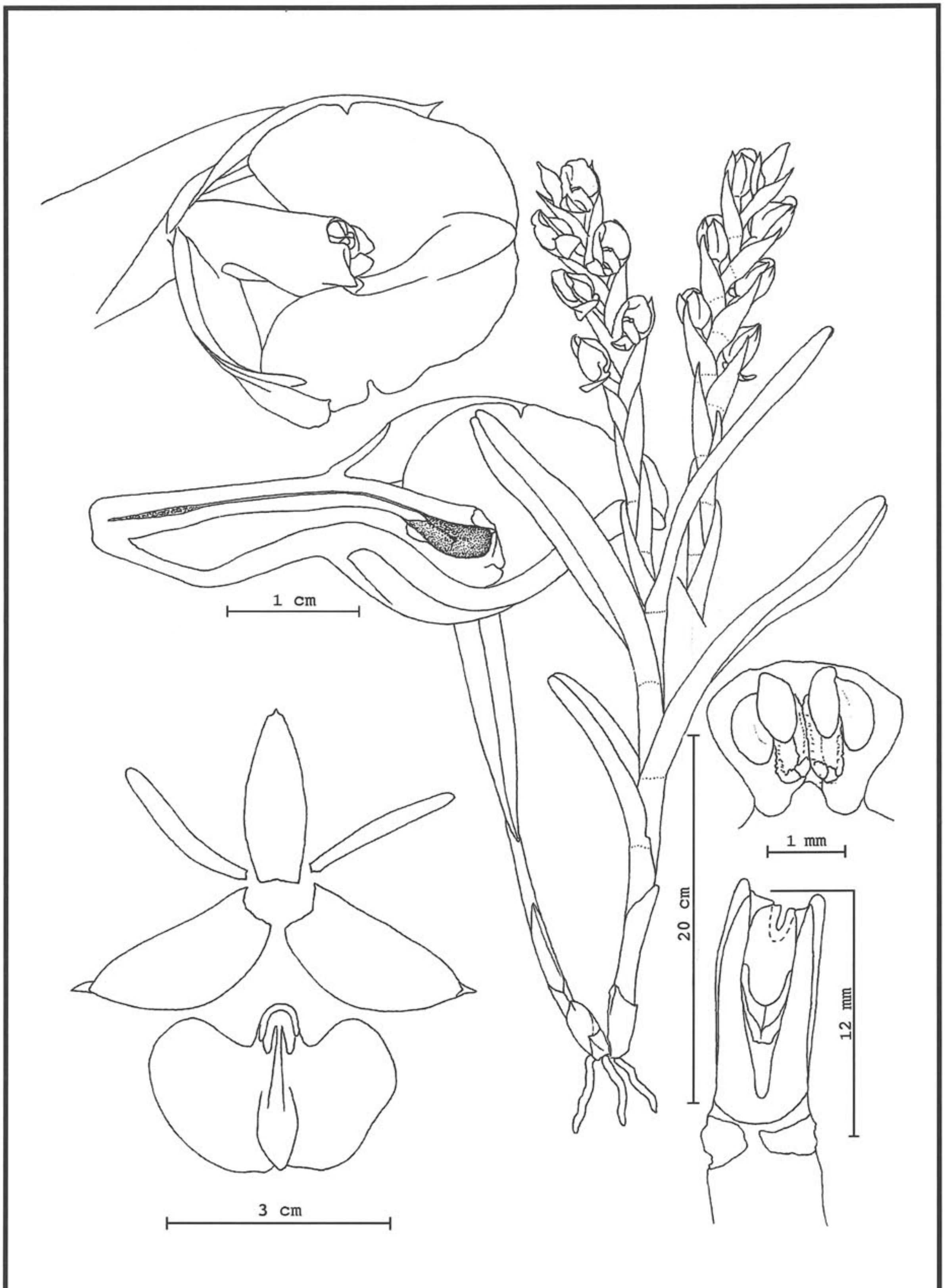
RECOGNITION: *Epidendrum pallens* belongs to the Bracteosum Group which is characterized by the sympodial, caespitose habit with laterally compressed, ancipitose, few-leaved stems covered by tubular, scarious sheaths, a racemose to paniculate, 3-11-flowered, arching inflorescence with prominent, acute floral bracts, the floral segments partly spreading, lip entire, generally auriculate at the base, the disc tricarinate and 4-cuniculate (on each side of the calli), and with fleshy-laminar thickenings beneath the calli; Pallens Subgroup which has 1-2 leaved stems, the leaves aggregate at the apex of the stem, inflorescence racemose, generally longer than the apical leaf, with the peduncle covered by 1-4 tubular, scarious, fibrous bracts, the floral bracts tubular, nearly parallel to the rachis. The species is recognized by the large, olive-green to pink-lilac flowers (sepals 18-24 mm long), the segments partly spreading and acute, the lip triangular ovate, twice as long as it is wide. *Epidendrum paucifolium* Schltr. has bright, fuchsia, orchid-colored flowers, with shorter, rounded floral segments (sepals 14-16 mm long), the lip about as long as it is wide, and the column with a pair of prominent, acute, apical teeth. *Epidendrum pitalense* Salazar, Hágsater & Linares has smaller, purple-brown flowers (sepals 14-17 mm long), the column green, lip pandurate-ovate, slightly longer than wide, with six laminar, very short thickenings below the calli.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *pallens*, pale, of a pale color, in reference to the pale color of the flowers.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM PALMENSE Ames

Plate 1154

EPIDENDRUM PALMENSE Ames, Sched. Orchid. 2: 33. 1923.

Basyonym: *Epidendrum magnibracteatum* Ames, Sched. Orchid. 1: 16. 1922. Type: Costa Rica, La Palma, August 1895, ***A. Tonduz 9688***. Holotype: US 815038! Isotypes: BR! CR! Z! illustration at AMES! Non *Epidendrum magnibracteum* Kränzl.

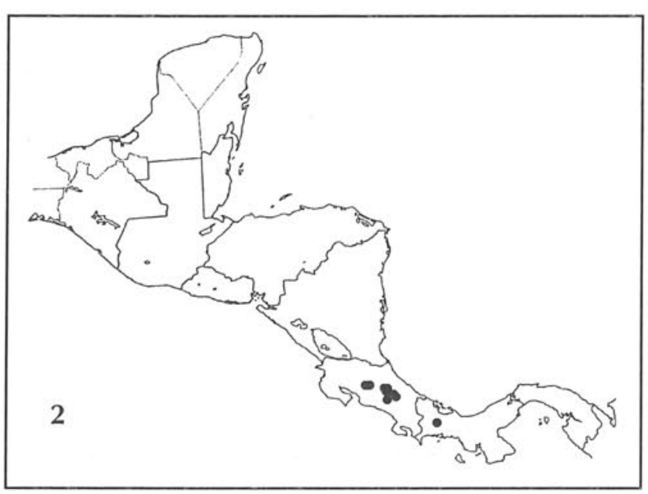
Hierba epífita simpodial, cespitosa, donde cada tallo nuevo se origina de la base del tallo anterior, 25-50 cm de alto. **Raíces** basales, carnosas, gruesas, 1.3-3 mm de grosor. **Tallos** sencillos, tipo caña, rectos, lateralmente comprimidos, 10-25 x 1-1.7 cm, cubiertos por 3-4 vainas, tubulares, lateralmente comprimidas, ancipitosas, estriadas cuando secas, 2-7 cm de largo. **Hojas** 2-4, distribuidas hacia el ápice del tallo, vaina tubular, lateralmente comprimida, ancipitosa, lisa, estriada cuando seca, verde, hasta 9 cm de largo; lámina foliar articulada, angostamente oblonga a elíptica, ápice profundamente bilobado, subcoriácea, lisa (superficie ligeramente rugosa), verde, margen entero, 8-24 x 2-4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, racemosa, dística, erecta, 12-40 cm de largo; pedúnculo cubierto por 3-9 brácteas imbricadas, conduplicadas, carinadas, largamente acuminadas, margen del ápice diminutamente dentado, 3.5-6 cm de largo; raquis lateralmente comprimido, zigzag, ancipitoso, alado. **Brácteas florales** semejantes a las del pedúnculo, más largas que el ovario pero más cortas que las flores, divergentes con respecto al raquis, arqueadas hacia adentro, conduplicadas, no imbricadas, ovadas al extender, largamente acuminadas, margen apical diminutamente dentado, 2-5 x 0.7-1.3 (sin extender) cm, en las inflorescencias secas, ya sin flores, son abiertas, no imbricadas, algo arqueadas hacia adentro. **Flores** 4-10, no resupinadas, casi simultáneas, todas abiertas hacia el mismo lado del raquis, verde manzana o amarillo-verdosas; fragancia "nocturna muy débil, verde-afrutada". **Ovario** terete, inflado en toda su longitud, formando una vesícula longitudinal, no ornamentado, 13-35 mm de largo. **Sépalos** libres, acuminados, glabros, coriáceos, margen extendido; el **dorsal** entreabierto, elíptico a angostamente ovado, 7-nervado, con nervaduras secundarias a los lados de la media, 14-26 x 5-7 mm; los **laterales** de entreabiertos a extendidos, (angostamente) ovados, oblicuos, con una quilla dorsal prominente, (cortamente acuminados), eroso-dentada en el margen, 7-nervados, 15-28 x 7-11 mm. **Pétalos** generalmente adherentes al margen superior de los sépalos laterales, lineares, obtusos a redondeados, 1-nervados o 3-nervados, margen extendido, margen entero; (12)15-23 x 1.5-2 mm. **Labelo** entero, reniforme a subtrapezoidal, convexo, cordado en la base, ápice retuso (truncado) (con la quilla central carnosa en el seno mucronado), margen entero; 14-26 x 17-28 mm (una carina central roma, ancha y llegando al seno apical); bicalloso, callos laminares, evidentes y fusionados en la base a los lados de la columna, convergentes por debajo del estigma; con tres quillas, dos cortas a los lados y una prominente debajo de la columna entre los callos, la cual se ensancha progresivamente, de tal manera que en la parte central es roma y carnosa, en ocasiones llegando hasta el seno apical formando un apículo. **Columna** recta, gruesa, 9-15 mm de largo. **Clinandrio** reducido, entero. **Rostelo** subapical, hendido. **Antera** elipsoide, con una quilla roma al frente, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Lóbulos laterales del estigma** pequeños, de ¼ del largo de la cavidad estigmática **Nectario** muy profundo, penetrando casi todo el largo del ovario, inflado en toda su longitud, liso interiormente. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb**. **Roots** basal, fleshy, thick. **Stems** simple, cane-like, straight, laterally compressed. **Leaves** 2-4, distributed along the apical part of stem; sheath tubular, laterally compressed, ancipitose, smooth, striated when dry; blade articulate, narrowly oblong to elliptic, subcoriaceous, apex deeply bilobed, smooth, margin entire. **Inflorescence** apical, from mature growth, flowering only once, simple, distichous, erect, zig-zag, laterally compressed, ancipitose, peduncle covered by 3-9 imbricating, conduplicate, carinate, long acuminate bracts, the margin minutely dentate. **Floral bracts** longer than ovary, conduplicate, long-acuminate, divergent, somewhat arched inward, not imbricating. **Flowers** 4-10, simultaneous, non-resupinate, opening on the same side of the rachis, concolor, apple-green or yellow-greenish; fragrance nocturnal, weak, green, fruit-like. **Ovary** terete, prominently inflated throughout, forming a vesicle. **Sepals** free, narrowly ovate, acuminate, dorsally keeled, the margin of the keel erose-dentate, 7-veined, coriaceous. **Petals** generally adherent to the upper margin of the lateral sepals, linear, 3-veined or 1-veined, apex acute. **Lip** entire, reniform to subtrapezoidal, convex, base cordate, apex truncate, emarginate, bicallose, the calli laminar, fused at the base to the sides of the column; 3-keeled, the lateral keels short, with the fleshy median keel thickened and forming a prominent apical mucro. **Column** straight, stout. **Clinandrium-hood** reduced, entire. **Rostellum** subapical, slit. **Anther** ellipsoid, with a low keel in front, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Nectary** deep, penetrating the length of the ovary and forming a prominent vesicle, smooth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread Costa Rica and scarce in western Panama (Chiriquí). Epiphytic, rarely terrestrial on road-banks, 1250-2400 m altitude. Flowering in (December) February-September.

RECOGNITION: *Epidendrum palmense* belongs to the Spathiger Group which is characterized by the sympodial habit, distichous inflorescence with large, conduplicate bracts, fleshy flowers with narrow petals and a reniform lip. The species is recognized by the prominent, acuminate floral bracts, 2-5 cm long, the oblong leaves 2-4 cm wide, the cordate, reniform lip, and the linear 1-3-veined petals adnate to the lateral sepals. It is similar to *E. palmidium* Hágsater, which has narrower leaves, less than 1.7 cm wide. *Epidendrum coriifolium* Lindl. has semiterete, fleshy, succulent leaves. *Epidendrum alvarezdeltoroi* Hágsater has shorter plants, stems with 1-2 leaves, and shorter, rounded bracts, and is restricted to the Mexican-Guatemalan border areas. *Epidendrum belloi* Hágsater has 5-7-leaved plants, elongate, narrow floral bracts longer than the perianth, smaller flowers and wider petals (3-5 mm), the lip cordiform, apiculate. *Epidendrum beharorum* Hágsater has narrow leaves (1.2-2.5 cm), successive flowers and is endemic to Chiapas (Mexico) and Guatemala. *Epidendrum amazonicoriifolium* Hágsater generally has longer, wider leaves (15-28 x 1.7-3.5 cm), successive flowers, one or two open at one time, and is endemic to the Amazon basin above 500 m altitude. *Epidendrum villotae* Hágsater ranges from the Atlantic lowlands in Costa Rica and Panama and the Pacific lowlands of Colombia and Ecuador, has 1.2-2.6 cm wide leaves, successive flowers, open one or two at a time, and oblanceolate petals.

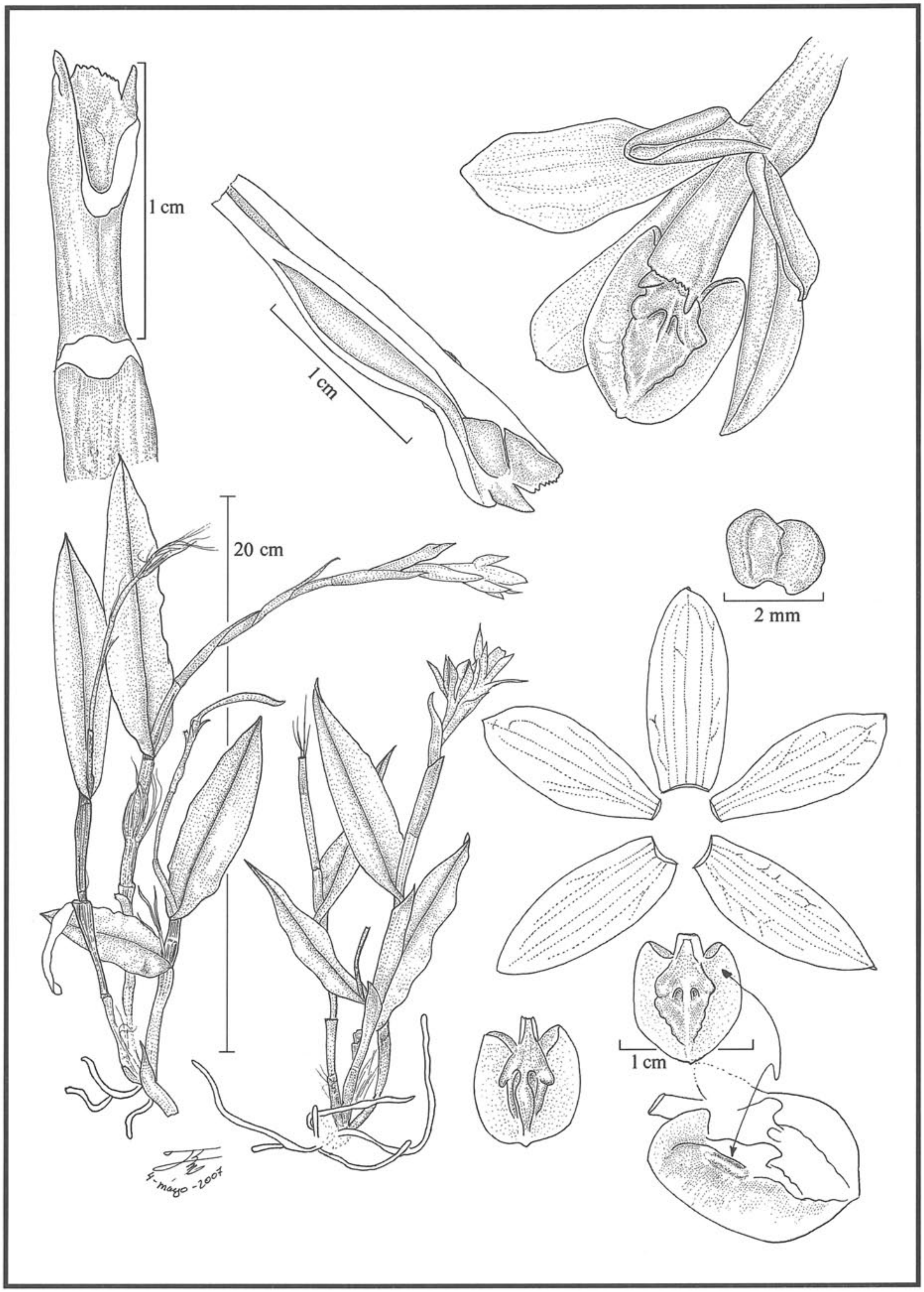


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the type locality of La Palma, Costa Rica. The first name given by Ames, *magnibracteatum* refers to the large bracts, common to this group of species, but a very similar name had been used previously by Kränzlin for a species of the Macrostachyum Group.

REFERENCES: E. Hágsater, J. García-Cruz & L. Sánchez Saldaña, 2003, in B. E. Hammel, M. H. Grayum, C. Herrera y N. Zamora (eds.) **Manual de Plantas de Costa Rica**, 3: 149.

Authors: R. Jiménez M. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM PAUCIFOLIUM Schltr. **Plate 1155**

EPIDENDRUM PAUCIFOLIUM Schltr., Repert. Spec. Nov. Regni Veg. 3. 248. 1907.

Type: COSTA RICA: Bei Cuera [Cuero] de Tigre, January 1897, ***Henri Pittier 10515.*** Holotype: B (destroyed) tracing of illustration prepared from the type: AMES! Lectotype (here designated): BR! Isolectotype: M!

Hierba epífita o litófita, simpodial, cespitosa, 15-30 cm de alto. **Raíces** basales, delgadas, blancas, 1-3 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente aplanados, ancipitosos, delgados en la base y ligeramente engrosados hacia el ápice, levemente arqueados, 4-14 x 0.18-0.5 cm; cubiertos por vainas (no foliares), tubulares, agudas, algo ancipitosas, ligeramente infladas en el ápice sin llegar a ser infundibuliformes, escariosas y fibrosas con el tiempo, 10-45 mm de largo. **Hojas** 1-2, agregadas en el ápice del tallo, articuladas, alternas, ascendentes; vainas tubulares, ancipitosas, 8-11 x 3-4.6 mm; lámina oblongo lanceolada a angostamente elíptica, subaguda, coriácea, margen entero, 5-11.5 x 1-2.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, con las flores alternas, pauciflora, laxa, suberecta a ligeramente arqueada, 9-19 cm de largo; pedúnculo delgado, ancipitoso, recto, generalmente mas corto que la hoja apical, 4.5-13.5 cm de largo; provisto de 1 a 2 brácteas tubulares, agudas, escariosas y fibrosas, 2.8-37 cm de largo; raquis delgado, ancipitoso, recto. **Brácteas florales** prominentes, más largas que el ovario, tubulares en la base, agudas, amplexicaules, 25-32 mm de largo. **Ovario** subterete, delgado, dilatado ligeramente hacia los 2/3 apicales, no ornamentado, 20-23 mm de largo. **Flores** 3-4, simultáneas, resupinadas, de color fucsia-magenta, los sépalos y pétalos dorsalmente lustrosos, base de la columna blanca; sin fragancia. **Sépalos** entreabiertos, libres, carnosos, oblongo elípticos, redondeados, diminutamente apiculados, 5-nervados, margen entero, revoluto, 14-16 x 4-6.5 mm. **Pétalos** entreabiertos, libres, carnosos, elíptico oblanceolados, redondeados, diminutamente apiculados, 3-nervados, las nervaduras laterales cortamente ramificadas a todo lo largo, margen entero, extendido, 14-15 x 4-6 mm. **Labelo** unido a la columna, entero, subcuadrado ovado, auriculado en la base, truncado en el ápice, diminutamente apiculado, margen entero, casi tan largo como ancho, 8-10 x 8-9 mm; bicalloso, los callos laminares, desvaneciéndose de manera gradual con las 3 quillas del labelo y en ocasiones formando una sola quilla muy carnosa, triangular, aguda, de margen crenulado y que se alarga hasta el ápice de la lámina, disco tetracuniculado, con un par de engrosamientos laminares debajo de los callos. **Columna** recta, delgada, con un diente apical prominente y agudo de cada lado, debajo de la antera, 8-10 mm de largo. **Clinandrio** prominente (aunque sin sobrepasar el ápice de la columna), carnoso, margen denticulado. **Antera** reniforme, 4-locular, con una quilla dorsal. **Polinios** 4, sublenticulares, lateralmente comprimidos. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando más de 2/3 del ovario, delgado, ligeramente inflado, liso. **Cápsula** elipsoide; pedicelo 5 mm de largo; cuerpo 22-30 x 17-19 mm; cuello apical 4-5 mm de largo.

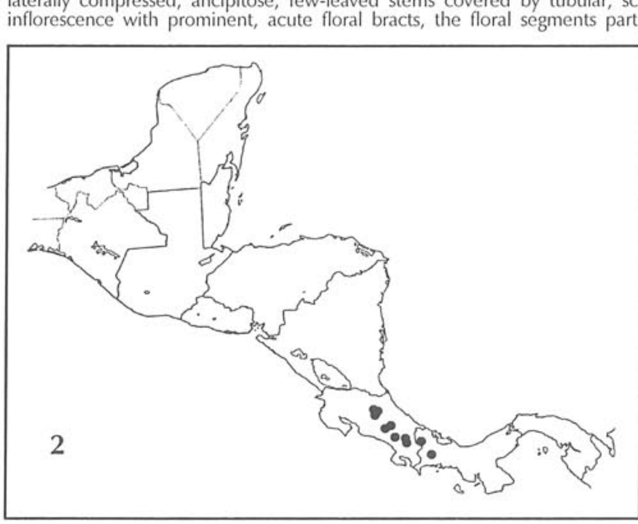
Epiphytic or lithophytic, sympodial, caespitose **herb. Roots** basal, thin, white. **Stems** simple, cane-like, laterally compressed, ancipitose, thin at the base and slightly thickened towards the apex, slightly arching; covered by non-foliaceous, tubular, acute, somewhat ancipitose sheaths slightly inflated towards the apex, becoming scarious and fibrous with time. **Leaves** 1-2, aggregate at the apex of the stem, articulate, alternate, ascending; sheaths tubular, ancipitose; blade oblong-lanceolate to narrowly elliptic, subacute, coriaceous, margin entire. **Inflorescence** apical, flowering only once, racemose, suberect to slightly arching, lax, few-flowered, the flowers alternate; peduncle thin, ancipitose, straight, generally shorter than the apical leaf, provided with 1-2 tubular, acute, scarious, fibrous bracts; rachis thin, ancipitose, straight. **Floral bracts** prominent, longer than the ovary, tubular at the base, acute, amplexicaul. **Ovary** subterete, thin, slightly dilated along the apical 2/3, smooth. **Flowers** 3-4, simultaneous, resupinate, fuchsia-magenta colored, bright sepals and petals, base of the column white; without fragrance. **Sepals** partly spreading, free, fleshy, oblong-elliptic, rounded, minutely apiculate, 5-veined, margin entire, revolute. **Petals** partly spreading, free, fleshy, elliptic-oblanceolate, rounded, minutely apiculate, 3-veined, the lateral veins short branched throughout, margin entire, spreading. **Lip** united to the column, entire, subquadrate-ovate, base auriculate, truncate at the apex, minutely apiculate, nearly as long as it is wide, margin entire; bicallose, the calli laminar, gradually blending into 3 keels, forming a single, fleshy, triangular, acute keel towards the apex of the lip, the margins of the keel crenulate; disc 4-cuniculate, with a pair of thickened, laminar keels below the calli. **Column** straight, thin, with a prominent apical, acute tooth on each side. **Clinandrium-hood** prominent, without surpassing the body of the column, fleshy, margin denticulate. **Anther** reniform, 4-celled, with a dorsal keel. **Pollinia** 4, sublenticular, laterally compressed. **Rostellum** subapical, slit. **Nectary** penetrating more than 2/3 of the ovary, thin, slightly inflated, smooth. **Capsule** ellipsoid, pedicel short, apical neck short.

OTHER SPECIMENS: COSTA RICA: Cartago: Cerro de la Muerte, 3200 m, 17 VIII 2002, *Alfaro 4081*, INB! Cabo Blanco, Irazú, XI 1949, *Allen 5400*, AMES! CAS! F! Villa Mills, vicinity of La Georgina, 9750 ft, 6 III 1981, *Almeda 4780*, CAS! Volcán Irazú, 29 VI 1947, *DeWolf 159*, AMES! USJ! Cerro de La Muerte, across the highway from La Georgina, 3100 m, 2 I 1979, *Kuhn 501*, CR! Ibid. 24 I 1979, *Kuhn 507*, CR! camino al Volcán Irazu, ca. 2000 m, 1 XII 1987, *Marín s.n.*, USJ! Volcán Irazú cerca de El Cedral, 2900 m, 28 VIII 1995, *Morales 4814*, INB! MO! Cerro La Muerte, 1 km W of Hotel Georgina, 3 km W of Villa Mills, ca. 3400 m, 2 III 1971, *Nee 3533*, F! Volcan Irazú, near Santa Rosa, 22 II 1924, *Standley 35443*, AMES! **[Limón:]** Cerro Kamuk massif, Cerro Dudu on the continental divide, 3000-3100 m, 26 III 1984, *Davidse 26071*, CR! MO! **San José:** Canaán to Chirripó, 3100-3200 m, 19 I 1970, *Burger 7373*, CR! F! (Illustration voucher) MO! Pacific slope of the Chirripó massif, 2700-3000 m, 6 IV 1969, *Davidse 1639*, MO! Cerro Jaboncillo, 3177 m, 30 III 1997, *Gamboa 1194*, INB! MO! N and W slopes of Cerro Páramo, 3400-3485 m, 12 III 1987, *Grayum 8189*, INB! MO! carretera a San Cristobal Norte, 2000 m, 10 III 1994, *Lépiz 200*, INB! El General, I 1891, *Pittier 3523*, BR! Cerro de las Vueltas, 2700-3000 m, 29 XII 1925, *Standley 43550*, AMES! US! Ibid. 2700-3000 m, 29 XII 1925, *Standley 43586*, AMES! US! Ibid. *Standley 43702*, AMES! US! Ibid. *Standley 44010*, AMES! US! **Puntarenas:** between Cerro Kasir and Cerro Naí, 2900-3050 m, 22 III 1984, *Davidse 25850*, MO! between Cerro Dudu and Cerro Nai, 2850 m, 26 III 1984, *Davidse 26086*, MO! **PANAMÁ: Chiriquí:** SE of La Nivera, NW of Potrero Muleto, 10000 ft, 15 III 1979, *D´Arcy 12524*, MO!

OTHER RECORDS: COSTA RICA: [Cartago:] Cerro Jaboncillo, 3000 m, 25 I 1964, *R. L. Rodríguez 195*, based on *R.L. Rodríguez 976*, xerox of illustration, AMO!

DISTRIBUTION AND ECOLOGY: Ranking from central Costa Rica to western Panama, epiphytic or lithophytic at 2000-3485 m altitude. Flowering from November to April, rarely in June and August.

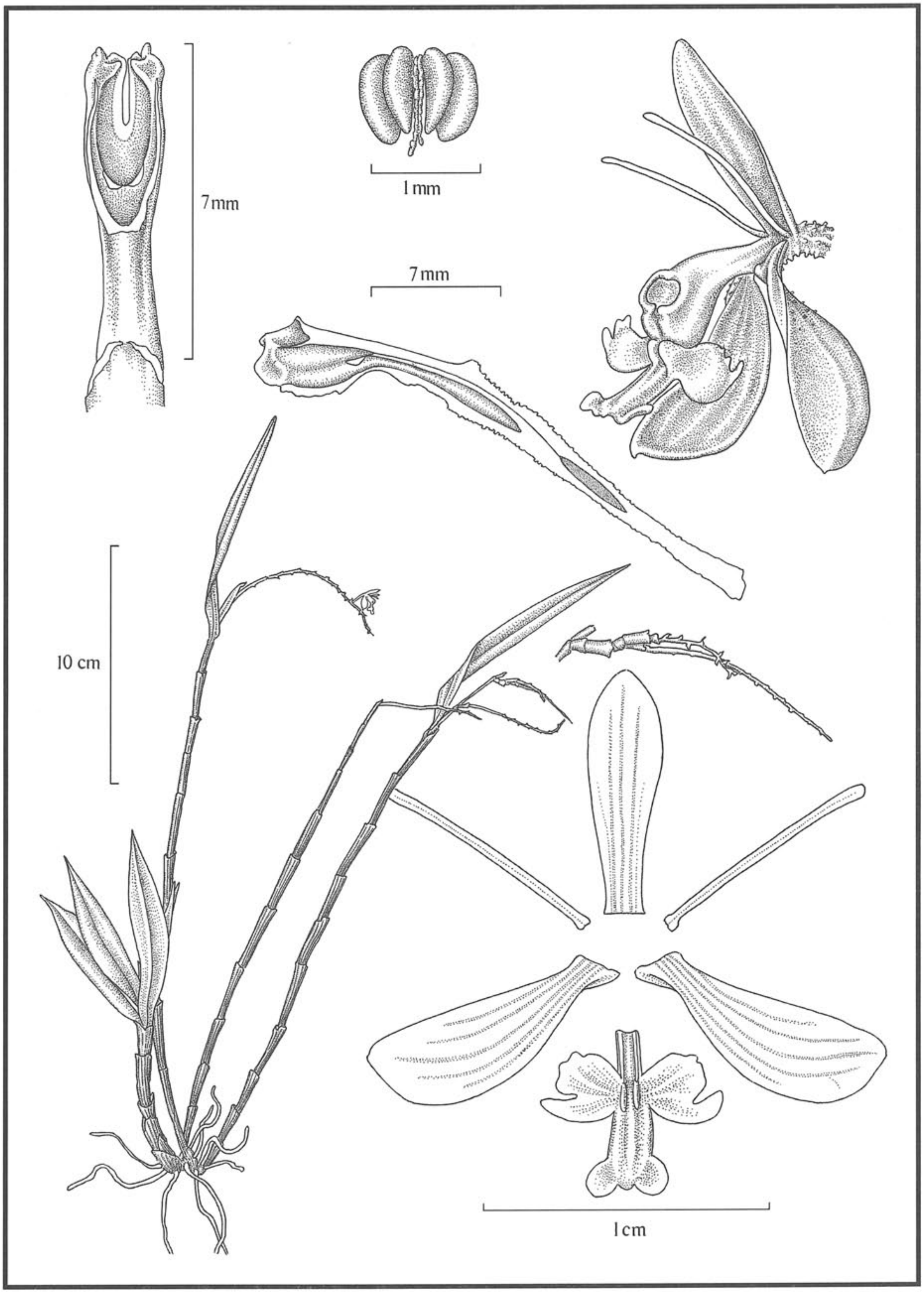
RECOGNITION: *Epidendrum paucifolium* belongs to the Bracteosum Group which is characterized by the sympodial, caespitose habit with laterally compressed, ancipitose, few-leaved stems covered by tubular, scarious sheaths, a racemose to paniculate, 3-11-flowered, arching inflorescence with prominent, acute floral bracts, the floral segments partly spreading, lip entire, generally auriculate at the base, the disc tricarinate and 4-cuniculate (on each side of the calli), and with fleshy-laminar thickenings beneath the calli; Pallens Subgroup which has 1-2 leaved stems, the leaves aggregate at the apex of the stem, inflorescence racemose, generally longer than the apical leaf, with the peduncle covered by 1-4 tubular, scariose, fibrose bracts, the floral bracts tubular, nearly parallel to the rachis. The species is recognized by the bright, fuchsia-magenta colored flowers, floral segments apically rounded, sepals 14-16 mm long, the margin revolute, lip nearly as long as it is wide (8-10 x 8-9 mm), and the apex of the column with a pair of prominent teeth. *Epidendrum pallens* Rchb.f. has larger, olive-brown to lilac-pink flowers (sepals 18-24 mm long), the floral segments acute, lip triangular-ovate, twice as long as it is wide, 14-17 x 8-10 mm. *Epidendrum pitalense* Salazar, Hágsater & Linares has purple-brown flowers, the column greenish, sepals 14-17 mm long, subacute, the margin spreading, lip pandurate-ovado, somewhat longer than wide. *Epidendrum bracteosum* Ames & C. Schweinf. has 3-4 leaves on a short, thickened stem, the floral bracts cymbiform, conduplicate, the flowers green, copper-tinged, and the lip panduriform-cordate, auriculate.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *pauci-*, few, and *folius*, leaved, or the few-leaved *Epidendrum*.

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Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM PERGAMENEUM Rchb.f.

Plate 1156

EPIDENDRUM PERGAMENEUM Rchb.f., Beitr. Orchid.-K. C. Amer. 86. 1866.

Type: COSTA RICA: (Alajuela: Barva:) Desengaño, (1900 m) 5 August 1857, ***Wendland 1251***. Holotype: W 50046! Isotype: Tracing from Herb. Reichenbach by R. Schlechter AMES 24090!

Hierba epífita, simpodial, cespitosa, 45-96 cm incluyendo la inflorescencia. **Raíces** basales, carnosas, filiformes a delgadas. **Tallos** sencillos, tipo caña, lateralmente comprimidos, rectos, 25-66 x 0.5-0.8 cm. **Hojas** 7-16, dísticas, distribuidas a lo largo del tallo; vaina foliar tubular, lateralmente comprimida, papirácea, cuando viejas y después de haber perdido el limbo, 2-4 cm de largo; láminas elíptico lanceoladas, cortamente acuminadas, subcoriáceas, con venas evidentes longitudinales, margen entero, extendido, 10-22 x 2-4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical y lateral, pluriracemosa, densa, puede florecer de los nudos de la inflorescencia primaria en años posteriores, formando racimos compuestos, 12-20 cm; pedúnculo 2-4 cm, cubierto por 2-4 brácteas imbricadas, tubulares, oblongo triangulares, agudas, 2-3 cm largo; raquis terete, liso. **Brácteas florales** mucho más cortas que el ovario, abrazadoras, ovado triangulares, agudas, 1-2 x 0.5-1 mm. **Ovario** terete, verrugoso papiloso, 10-15 x 0.2-0.4 mm. **Flores** 15-25 por racimo, simultáneas, resupinadas, amarillo anaranjadas, verdosas a café amarillentas en las flores más viejas, fragancia no registrada. **Sépalos** extendidos, libres, elípticos, obtusos, verrugoso papilosos dorsalmente en la base, 5-nervados, margen extendido, entero, 10-13 x 3.5-4.2 mm; los **laterales** oblicuos. **Pétalos** extendidos a retrorsos, libres, filiformes, agudos, 1-nervados, margen extendido, entero, 9-11 x 0.2-0.3 mm. **Labelo** unido a la columna, trilobado, 8-8.5 x 8.5-9 mm; bicalloso, los callos alargados, prominentes, disco con una carina central, prominente, la cual se prolonga hasta el ápice del lóbulo medio; lóbulos laterales emarginados, formando dos lóbulos, 2.5-3 x 2.3-2.6 mm, los basales, suborbiculares, margen ondulado a dentado, los apicales oblongos, agudos, falcados hacia la base, más largos que los basales; lóbulo medio oblongo rectangular, margen entero, ápice con un seno amplio, formando dos lóbulos semiorbiculares a triangulares, 4-4.5 x 2.5-2.8 mm. **Columna** recta, delgada en la base, dilatada hacia el ápice, 9-9.5 x 1.8-2.2 mm. **Clinandrio** reducido, entero. **Antera** ovoide, 4-locular. **Polinios** 4, angostamente semiobovoides, lateralmente comprimidos; caudículas suaves y granulosas, ligeramente más largas que los polinios; viscidio viscoso transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/2 de la longitud de la cavidad estigmática. **Nectario** corto, penetrando 1/4 del ovario, liso. **Cápsula** no vista.

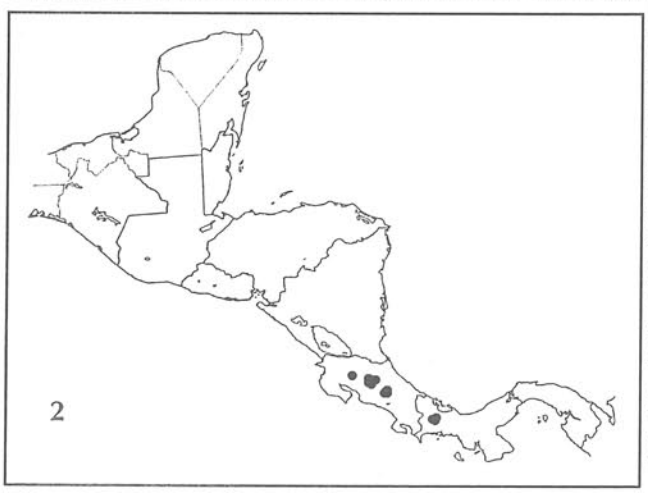
Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, filiform to thin. **Stems** simple, cane-like, laterally compressed, straight. **Leaves** 7-16, distichous, distributed throughout the stem; sheaths tubular, laterally compressed, smooth, papiraceous when old; blade lanceolate-elliptic, short-acuminate, subcoriaceous, with evident veins, margin entire, spreading. **Inflorescence** apical and lateral, compound racemose, dense, producing new racemes from the nodes of the primary inflorescence through the years; peduncle short, covered by 2-4 imbricating, tubular, oblong-triangular, acute bracts; rachis terete, smooth. **Floral bracts** mush shorter than the ovary, ovate-triangular, acute. **Ovary** terete, verrucose-papillose. **Flowers** 15-25 per raceme, simultaneous, resupinate, orange-yellow to yellow-brown. **Sepals** spreading, free, elliptic, obtuse, verrucose-papillose dorsally at the base, 5-veined, margin entire, spreading, the lateral sepals oblique. **Petals** spreading to retrorse, free, filiform, acute, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed; bicallose, the calli elongate, prominent, disc with a central, prominent keel which reaches de apical sinus of the midlobe; lateral lobes emarginate, forming two lobes, the basal lobes suborbicular, margin undulate to dentate, the apical lobes oblong, acute, falcate towards the base, longer than the basal lobes; midlobe oblong-rectangular, apex with wide sinus, forming a pair of semiorbicular to triangular lobes. **Column** straight, base thin, dilated towards the apex. **Clinandrium-hood** reduced, entire. **Anther** ovoid, 4-celled. **Pollinia** 4, narrowly semiobovoid, laterally compressed; caudicles soft and granulose, slightly longer than the pollinia; viscidium viscous, transparent. **Rostellum** apical, slit. **Nectary** short, penetrating 1/4[th] of the ovary, smooth.

OTHER SPECIMENS: COSTA RICA: Alajuela: Barba, 2200 m, I 1909, *Brade 1125*, AMES! **Cartago:** Santa Clara de Cartago, 6500 ft., 1 VII 1923, *Lankester 494*, AMES! Irazú, El Roble, 1 V 1928, *Lankester 1219*, AMES! **Heredia:** Volcan Barba, 2100 m, 8 II 1965, *Blaisdell 96*, MO! Headwaters of Rio Santo Domingo, ca. 3 km NE of San Rafael de Vara Blanca, N. slope of Volcán Barva, 2060 m, 17 April 1986, *Grayum 7223*, AMOx2! MO! (Illustration) South slope of Volcán Barba, 2000 m, 26 V 1965, *Hatheway 1367*, F! 1 km NE of Los Cartagos, 2100 m, 25 I 1970, *Lent 1895*, CR! F! Parque Nac. Braulio Carrillo, Sendero Cerro Guararí, 2600 m, 9 X 1989, *Rivera 102*, INB! Vásquez de Coronado, Cerro de Zurquí, northeast of San Isidro, 2000-2400 m, 3 III 1926, *Standley 50561*, AMES! Vara Blanca de Sarapiquí, north slope of Central Cordillera, between Póas and Barba volcanoes, 2200 m II 1938, *Skutch 3542*, AMES x2! Hacienda Monte Cristo en San Rafael de Heredia, 1560 m, 20 XI 1936, *Solis 472*, CR! F! MO! (Illustration voucher) **San José:** Vertiente Pacifica, Tarbaca, 1800 m, col. 20 XII 1982, pressed cult. 2 I 1985, *Hágsater 6997*, AMO! Ibid. 20 VI 1985, AMO! San José, Las Nubes, 6500 ft, 8 II 1940, *Hunnewell 16588*, AMES! Along Interamerican Highway, 23 km by road SE of Cerro de La Muerte, 7000-8000 ft., 25 V 1971, *Proctor 32047*,LL! MO! Tapantí, Near Laguna de La Escuadra, northeast of El Copey, 2000-2200 m, 16 XII 1925, *Standley 41935*, AMES! Ibid. *Standley 42018*, AMES! US! Ibid. *42080*, AMES! 3 miles east of Las Nubes, east of San Isidro de Coronado, 14 I 1956, *Stork 4742*, MICH! UC! Copey, 1800 m, 1 IV 1898, *Tonduz 11825*, G! US x2! San Pedro de Coronado, 1400 m, 1 IX 1937, *Valerio 2582*, AMES! **Puntarenas:** Reserva Monteverde, Sendero Nuboso, 1 XII 1984, *Dressler 220*, USJ! **PANAMA: Chiriquí:** Bajo Mono, Boquete, 4500 ft, 30 III 1938, *Davidson 457*, AMES! Guadalupe, cerca de Cerro Punta, 18 III 1981, Lucho Castro, *Hágsater 6432*, AMO! (flowers in spirit). Volcán Barú (E slope) deep draw west of Finca Yen, 8000 ft, 17 III 1979, *Hammel 6469*, MO! Cerro Punta 2.5 km SE of town, 20 IV 1975, *Mori 5674*, MO! Ca 3.7 km E of bridge NE of Cerro Punta on road through, Bajo Grande, 2250-2400 m, 9 XI 1980, *Stevens 18192*, AMO! MO! Trail from Bajo Grande (a village about 2 km east of Cerro Punta) along the Quebrado Grande to the top of Paso de Respingo on the trail to Boquete, Furthest point reached was about 6 km east of Cerro Punta, 2100-2400 m, 23 XII 1971, *Utley 15169*, MO!

OTHER RECORDS: COSTA RICA: Without locality, *Bogarín 250*, illustration and photograph by Franco Pupulin, digital images, AMO!

DISTRIBUTION AND ECOLOGY: Known from Costa Rica and western Panama, along the summit of the cordillera, epiphytic in cloud forest, 1700-2600 m altitude. Flowering from November to May.

RECOGNITION: *Epidendrum pergameneum* belongs to the Anceps Group, which is recognized by the simple stems, generally elongate, compound racemose inflorescence producing new successive racemes with time, fleshy flowers, filiform to narrowly spatulate petals, and the Polyanthum Subgroup which has elongate, not subcorymbose racemes. The species is recognized by the laterally compressed stems, leaves with evident venation, apical and lateral inflorescences, though these are short, verrucose-papillose sepals and ovary and the sepals 10-13 mm long and the lobes of the lip twice as long as broad. *Epidendrum muricatisepalum* Hágsater, an endemic from Costa Rica has laterally compressed stems, large flowers sepals 10-11 mm long, the ovary and dorsal surface of the sepals densely muricate-strigous, and the lateral lobes of the lip divided into variously angled, subtriangular lobes. *Epidendrum polyanthum* Lindl. from Mexico, Belice, Guatemala, El Salvador and Honduras has large plants and flowers, terete stems, and the lateral lobes of the lip semiovate with a small sinus in the margin. *Epidendrum myodes* Rchb.f. has delicate plants, terete stems, small flowers, sepals 3-5 mm long, and the bilobed lateral lobes of the lip with the basal lobe rounded and the long, acuminate, falcate, apical lobe.

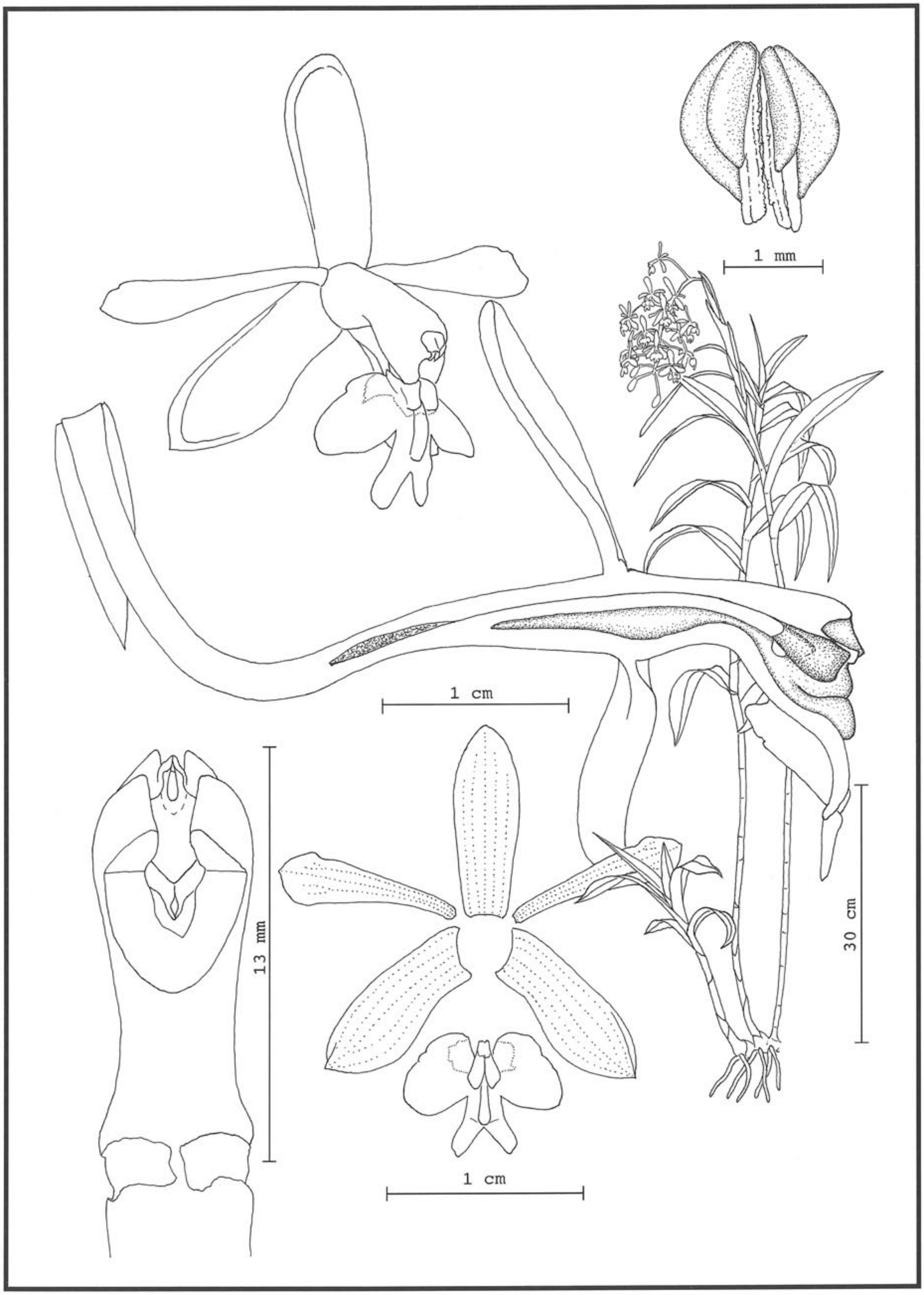


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *pergameneus*, parchment-like, in reference to the appearance of the leaves.

REFERENCES: Hágsater, E., in Hammel et al., 2003, **Manual de Plantas de Costa Rica**, Missouri Botanical Garden, 3: 152.

Authors: L. Sánchez S. & E. Hágsater | Illustrator: M. López R. | Editors: E. Hágsater & L. Sánchez S.



EPIDENDRUM PFAVII Rolfe

Plate 1157

EPIDENDRUM PFAVII Rolfe, Bull. Misc. Inform. Kew 1894: 392. 1894.

Type: COSTA RICA: Sept. 1894, ***Richard Pfau 214***. Holotype: K! Fragment of holotype, (only a flower) and an tracing of drawing: AMES!

Hierba epífita, simpodial, cespitosa, 120-200 cm de alto. **Raíces** basales, carnosas, gruesas. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados cerca del ápice, erectos, rectos, 90-140 x 0.6-1.5 cm. **Hojas** numerosas, distribuidas a lo largo del tallo (en tallos viejos, las de la base frecuentemente ya no persistentes), articuladas, dísticas; vaínas tubulares, finamente estriadas, 25-45 mm de largo; lámina lanceolada, acuminada, diminutamente apiculada, coriácea, margen entero, extendido, 13-23 x 1.6-3.9 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, sucesiva, generalmente plurianual, originando hasta 2 racimos por año, (a partir un mismo pedúnculo), arqueado-nutante, multiflora, densa, 37-60 cm de largo; pedúnculo recto, lateralmente aplanado, 24-33 cm de largo; oculto en su totalidad por 4-7 brácteas muy prominentes, oblongo lanceoladas, acuminadas, conduplicadas e imbricadas, de color verde ocasionalmente con tintes amoratados, 7-13 cm de largo; raquis recto. **Brácteas florales** mucho más cortas que el ovario, triangular-cimbiformes, acuminadas, 7-18 mm de largo. **Ovario** terete, delgado, algo dilatado detrás del perianto, de color magenta rosado, no ornamentado, 30-58 mm de largo. **Flores** 17-60, sucesivas (aunque llegando a estar abiertas casi en su totalidad de manera simultánea), resupinadas, carnosas, de color magenta rosado, antera y una mancha claramente definida sobre la base del disco del labelo de color blanco [también han sido reportadas formas de color blanco puro*]; fragancia diurna, débil, a perfume. **Sépalos** algo reflexos, libres, angostamente obovados, redondeados, cóncavos en la mitad apical, 5-nervados, los márgenes enteros, extendidos, 18-20 x 6-8 mm; los **laterales** oblicuos. **Pétalos** algo reflexos, libres, espatulados, redondeados, 3-nervados, margen entero, extendido, 17-19 x 5-6 mm. **Labelo** unido a la columna, trilobado, cordado en la base, 10-13 x 15-18 mm; bicalloso, los callos prominentes, laminares, lateralmente aplanados; disco unicarinado, la carina carnosa, delgada, alargada hasta el seno apical del labelo; lóbulos laterales dolabriformes, margen crenulado, 7 x 7 mm; lóbulo medio obcuneado, el ápice bilobado, cada lóbulo oblicuamente rectangular, el ápice algo truncado, margen entero, 5 x 6 mm. **Columna** recta, delgada, 13-14 mm de largo. **Clinandrio** reducido (la antera expuesta en su totalidad), margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, semiovoides, lateralmente fuertemente comprimidos, desiguales en tamaño (el par interior más corto), caudículas suaves y granulosas, ligeramente más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, de ¼ del largo de la cavidad estigmática. **Nectario** penetrando ¼ del ovario, ligeramente inflado a la altura del perianto, no ornamentado. **Cápsula** no vista.

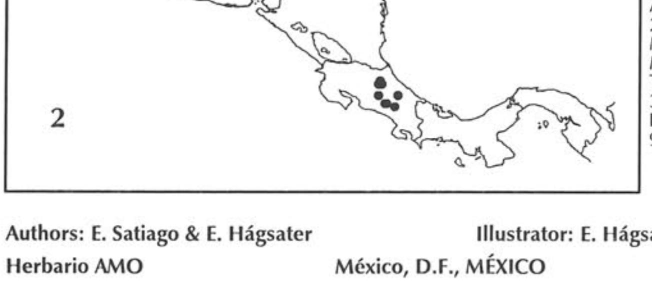
Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete at the base, laterally compressed near the apex, erect, straight, tall. **Leaves** numerous, distributed throughout the stem (on old stems, the lower ones often missing), articulate, distichous; sheaths tubular, minutely striated; blade lanceolate, acuminate, minutely apiculate, coriaceous, margin entire, spreading. **Inflorescence** apical, racemose, producing new racemes through the years, with up to 2 racemes per year from the same peduncle, arching nutant, densely many-flowered; peduncle straight, laterally compressed, totally hidden within 4-7 very prominent, oblong-lanceolate, acuminate, conduplicate, imbricating bracts, green, the basal ones sometimes slightly tinged with purple; rachis straight. **Floral bracts** much shorter than the ovary, triangular-cymbiform, acuminate. **Ovary** terete, thin, somewhat dilated behind the perianth, pink-magenta colored, smooth, long. **Flowers** 17-60, successive (though nearly all may be open at once), resupinate, fleshy, magenta-pink colored, with a clearly defined white blotch at the base of the lip, anther white [pure white forms have been reported]; with a weak diurnal, perfume-like fragrance. **Sepals** somewhat reflexed, free, narrowly obovate, rounded, the apical half, concave, 5-veined, margins entire, spreading, the lateral sepals oblique. **Petals** somewhat reflexed, free, spatulate, rounded, 3-veined, margin entire. **Lip** united to the column, 3-lobed, base cordate; bicallose, the calli prominent, laminar, laterally compressed, disc one-keeled, the keel fleshy, thin, reaching the apical sinus; lateral lobes dolabriform, margin crenulate; midlobe obcuneate, the apex bilobed, each lobes obliquely rectangular, apex somewhat obliquely truncate, margin entire. **Column** straight, thin. **Clinandrium-hood** reduced (the anther totally exposed), margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, semiovoid, laterally strongly compressed, unequal the inner pair shorter, caudicles soft and granulose, slightly longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating ¼ of the ovary, slightly inflated at the perianth, smooth.

OTHER SPECIMENS: COSTA RICA: Without locality data, VI 1920, *Lankester K341*, K! Ibid. 29 V 1924, *Lankester 837*, AMES! Ibid. *Lankester 1001*, AMES! **Cartago:** Cult. Lankester Gardens, silvestre near Cartago, 1325 m, VIII 1963, *Dodson 2403*, SEL! La Carpintera, 1700 m, IV 1937, *Valerio 2631*, AMES! **[Heredia:]** Los Cuadros, Irazú slopes, 9 VIII 1959, *Alfaro 157*, AMES! US! Vertiente Pacífica, faldas sureñas del Volcán Barba, cabecera del Río Porosatí, 1800-2100 m, pressed cult. 24 VI 1985, *Hágsater 6757*, AMO! (Illustration voucher) Ibid. 17 VII 1986, *Hágsater 6757*, AMO! INB! Ibid. 12 VII 1992, *Hágsater 6757*, AMO! Río Porrosatí, Barba Volcano, 1950 m, 26 VIII 1972, *Lent 2800*, CR! F! MO! **San José:** In garden of Alfredo Brade; plants from Candelaria, 30 IV 1924, *Alfaro s.n.* US! In Mrs. Zeledon's garden, 27 VIII 1924, *Alfaro s.n.*, US! San Isidro de Coronado, XII 1941, *Collado 1*, CR! Candelaria, 1800 m, 1908, *Brade 1057*, AMES! Vicinity of San José, in Brade's garden, 1150 m, 6 IV 1924, *Standley 40282*, AMES!

OTHER RECORD: COSTA RICA: Without locality data, *McCullough 1543,* slide, AMO! Ibid. 2 IX 1962, *L. Rodríguez 5*, slide of illustration, AMO! **[Heredia:]** Vertiente Pacifica, faldas sureñas del Volcán Barba, cabecera del Río Porosatí, 1800-2100 m, pressed cult. 24 VI 1985, *Hágsater 6757*, spirit and flower card, AMO! Volcán Barva, 12 III 1983, *Horich s.n.*, spirit, AMO! **San José:** Cerros de Alajuelita, flowered in cultivation at Tambor de Alajuela, photographed 15 I 2001, *Cascante s.n.*, color photo, in F. Pupulin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1: 293, San José, C.R.

DISTRIBUTION AND ECOLOGY: Endemic to central Costa Rica, Epiphytic, at 1700-2000 m altitude. Flowering from April to September. Van der Pijl and Dodson (1966) report pollination by hummingbirds.

RECOGNITION: *Epidendrum pfavii* belongs to the Cristatum Group which is characterized by the sympodial, caespitose habit, many-leaved stems, apical racemose inflorescence with several large, imbricating bracts, and producing successive racemes over the years from the peduncle, Cnemidophorum Subgroup, with pink-purple or yellow to yellowish green flowers, the lip with the margin of the lateral lobes entire. The species is recognized by the large, robust plants up to 2 m tall, the many-flowered inflorescence with acuminate imbricating bracts of the peduncle, and fleshy, magenta-colored flowers with a large, clearly defined white blotch at the base of the lip. *Epidendrum cnemidophorum* Lindl. is vegetatively similar, but the bracts of the inflorescence are rounded, the flowers are dorsally pale pink, inside greenish yellow with irregular brown to reddish purple spots, the lip and column magenta-rose and white. *Epidendrum tziscaoënse* Hágsater has pale green flowers with reddish brown spots on the sepals and petals, the lip and column white slightly tinged purple on the sides of the anther and around the disc of the lip, the midlobe is narrowly elliptic, acute, not bilobed.



2

NOTE: *A rare, pure white form has been reported by C. K. Horich (cited by Teuscher, 1964), and C. H. Lankester (cited by Fowlie, 1964) from the Cordillera Central.

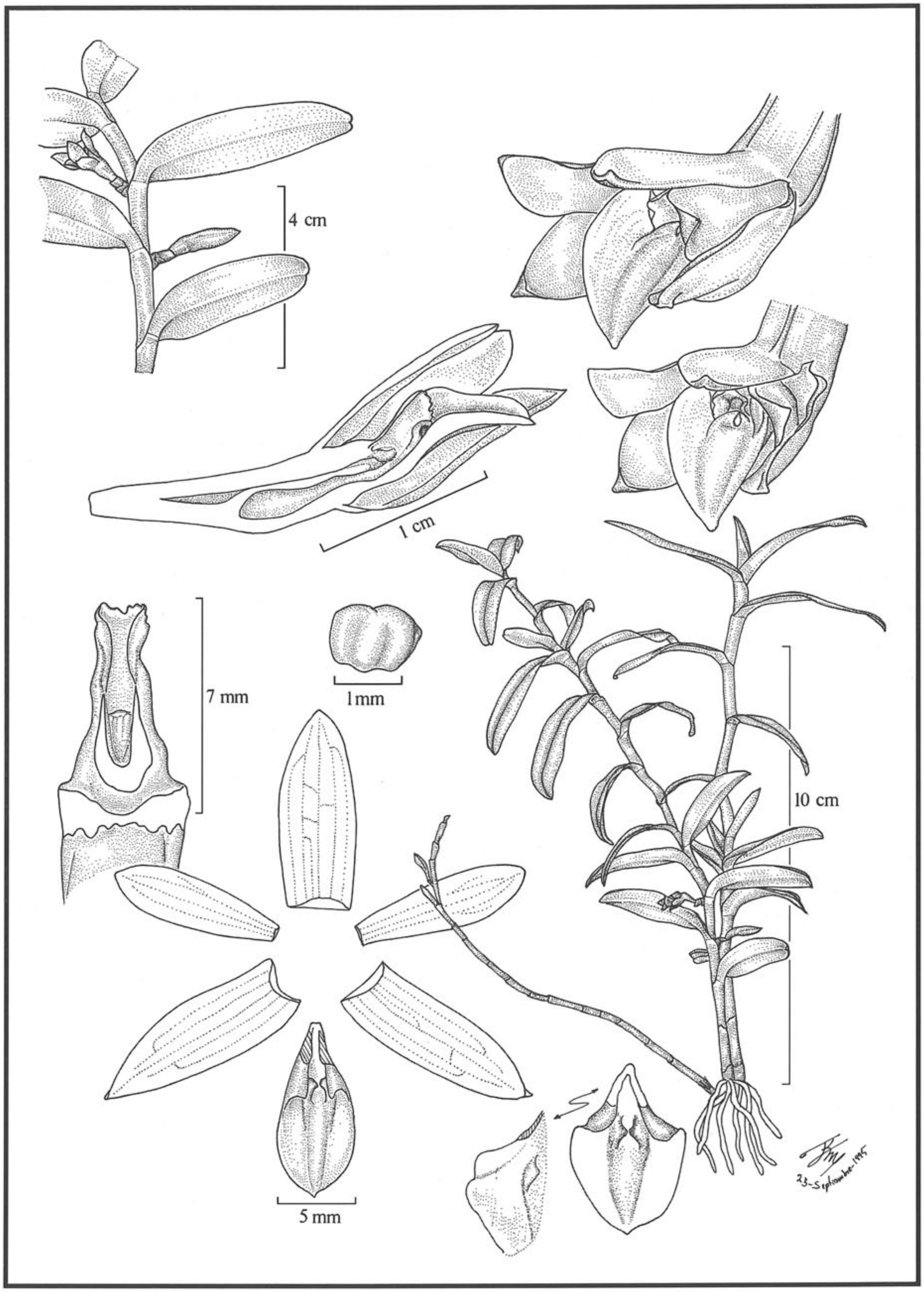
CONSERVATION STATUS: DD. Data deficient. Apparently rare.

ETYMOLOGY: Named in honor of Richard Pfau, Swiss Orchid Collector who sent the type and an illustration from Costa Rica to Rolfe at K.

REFERENCES: Dressler R.L., 1993. **Field guide to the Orchids of Costa Rica and Panama,** Cornell Univ. Press, p. 65. Plate 4, photo 6; Fowlie, J.A., 1964, *Epidendrum pfavii* and its overspecialization, **Amer. Orchid. Soc. Bull.** 33: 562; Hágsater, E., in Hammel et al., 2003, *Epidendrum*, **Manual de Plantas de Costa Rica**, vol. III, Missouri Botanical Garden, p. 152-153; Moir, W.W.G., 1970. *Reed Epidendrums of the Forest*, **Orchid. Digest.** 34: 62-64; Teuscher, H., 1964. *Epidendrum pfavii,* **Amer. Orchid. Soc. Bull.** 33: 558; Van der Pijl, L. & Calaway H. Dodson, 1966. **Orchid Flowers-Their Pollination and Evolution,** Univ. Miami Press, pg. 95.

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Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM PHRAGMITES Heller & L.O.Williams

Plate 1158

EPIDENDRUM PHRAGMITES Heller & L.O.Williams, Fieldiana, Bot. 32(2):7. 1968.

Type: NICARAGUA: Jinotega; Cordillera Central de Nicaragua, Finca Perla, 1100 m, March 1961, ***A. H. Heller 4377***. Holotype: F! Illustration by Heller, K! Illustration and personal notes by Heller, xerox at AMO!

Hierba epífita, simpodial, cespitosa, hasta 80 cm de alto. **Raíces** basales, carnosas, delgadas, ca. 2 mm de grosor. **Tallos** tipo caña, sencillos, teretes a ligeramente aplanados, erectos, rectos, ca. 80 x 0.4-1.0 cm. **Hojas** numerosas, distribuidas a lo largo del tallo, todas presentes en el primer año, la mitad apical en el segundo año y sólo 1 o 2 presentes en el ápice del tallo al tercer año, carnosas, articuladas, extendidas, desiguales en tamaño; los tallos cubiertos en su totalidad por vainas (las inferiores no foliares), tubulares, verdes, escariosas con el tiempo, 2-3 cm de largo; lámina ovado elíptica a ovado lanceolada, obtusa, bilobada, coriácea, verde algo más oscura y brillante sobre el haz, 4-8 x 1.5-4 cm. **Bráctea espatácea** ausente. **Inflorescencias** numerosas, laterales, producidas de la base de las vainas foliares, subsésiles; pedúnculo muy corto, ca. 3 mm de largo, oculto en su totalidad por 3-4 brácteas cortas, tubulares, imbricadas, 2-3 mm de largo. **Brácteas florales** pequeñas, tubulares, más cortas que el ovario, 2-5 mm de largo. **Flores** 1-2, simultáneas, con el labelo siempre orientado hacia el raquis, de color verde amarillento a verde pálido; sin datos de fragancia. **Ovario** terete, grueso, sulcado, ligeramente arqueado, algo inflado ventralmente en la mitad apical, 8-9 mm de largo. **Sépalos** entreabiertos, libres, angostamente oblongo lanceolados a oblongo elípticos, ligeramente cóncavos, carnosos, el ápice agudo, 5-nervados, margen extendido, entero, 12-13.7 x 3-5 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, libres, oblanceolados, agudos, 3-nervados, margen extendido, entero, carnosos, 10-11 x 2-2.5 mm. **Labelo** unido a la columna, entero, ovado (raramente incipientemente 3-lobado), agudo, ligeramente abrazando a la columna en posición natural (sin envolverla por completo), margen entero, los márgenes basales algo involutos, 8-11 x 6-7 mm; bicuniculado y bicalloso, los callos subtriangulares, laminares, arqueados hacia el centro y tocándose el uno al otro; disco unicarinado, la carina prominente, carnosa, que se prolonga cerca del ápice de la lámina. **Columna** muy corta, gruesa, el clinandrio arqueado hacia arriba, ca. 3 mm de largo. **Clinandrio** muy prominente, sobrepasando el cuerpo de la columna, tan largo como el cuerpo de la columna, semitubular, margen eroso, 4 mm de largo. **Antera** subreniforme, 4 locular. **Polinios** 4, obovoides, lateralmente comprimidos, caudículas suaves y granulosas, tan largas como los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando cerca de la mitad del ovario, ligeramente inflado, liso. **Cápsula** no vista.

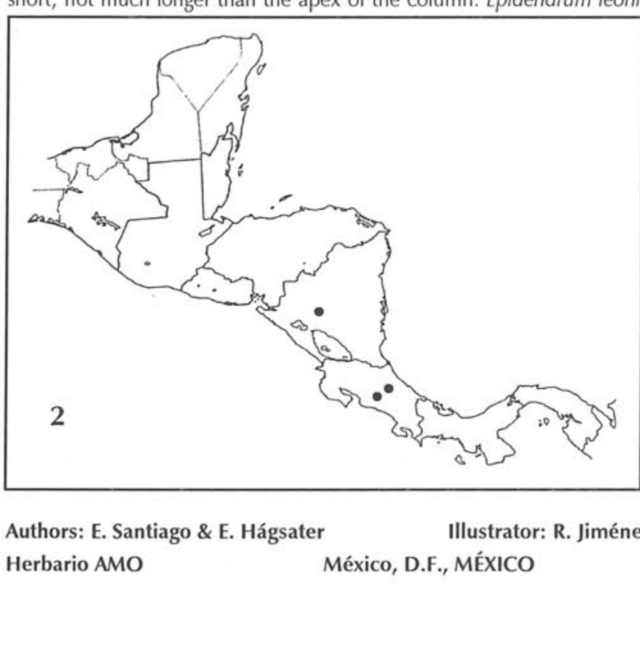
Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thin. **Stems** cane-like, simple, terete to slightly flattened, erect, straight. **Leaves** numerous, distributed throughout the stem, all present the first year, half the second year and only 1 or 2 by the third year, fleshy, articulate, spreading, unequal in size; sheaths covering the whole stem, the lower sheaths non-foliaceous, the sheaths tubular, green scarious with time; blade ovate-elliptic to ovate-lanceolate, obtuse, bilobed, coriaceous, the upper side somewhat darker green and lustrous. **Inflorescences** numerous, lateral, produced from the base of the leaf sheaths, subsessile, peduncle very short, hidden by 3-4 short, tubular, imbricating bracts. **Floral bracts** small, tubular, shorter than the ovary. **Flowers** 1-2, simultaneous, the lip always facing the rachis, yellowish green to pale green. **Ovary** terete, thick, sulcate, slightly arched, somewhat ventrally inflated along the apical half. **Sepals** partly spreading, free, narrowly lanceolate-oblong to elliptic-oblong, slightly concave, fleshy, apex acute, 5-veined, margin entire, spreading; the lateral sepals slightly oblique. **Petals** partly spreading, free, fleshy, oblanceolate, acute, 3-veined, margin entire, spreading. **Lip** united to the column, entire, ovate (rarely slightly 3-lobed), acute, somewhat embracing the column in natural position, margin entire, the basal somewhat involute; bicuniculate and bicallose, the calli subtriangular, laminar, inturned and facing each other, disc one-keeled, the keel prominent, fleshy, prolonged to the apex of the lip. **Column** very short, thick, the clinandrium-hood arching upwards. **Clinandrium-hood** very prominent, as long as the body of the column, semitubular, margin erose. **Anther** subreniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles soft and granulose, as log as the pollinia. **Rostellum** subapical, slit. **Nectary** penetrating about half of the ovary, slightly inflated, smooth.

OTHER SPECIMENS: COSTA RICA: Cartago: Turrialba, cultivado en El Dos, Sta. Teresita Turrialba, 660 m, 19 III 1994, *Salazar sub Hágsater 11456*, AMO! (Illustration voucher) Hort. In C. H. Lankester Gardens, Las Cóncavas, 1400 m, 3 VII 1948, *Williams 13807*, EAP!

OTHER RECORDS: COSTA RICA: Cartago: Turrialba, cultivado en El Dos, Sta. Teresita Turrialba, 660 m, photographed 25 IX 1995, *Salazar sub Hágsater 11456*, flower card and slide, AMO! Heller cites in his notes the following specimens of which we have seen no record: **NICARAGUA: Jinotega:** Base Peña Blanca, March, 3600 ft, *Heller 7117*. Perla Finca 3400 ft, III 1961, *Heller 4454*. Top Jinotega Grade, 4300 ft, *Heller 6384*. **Matagalpa:** La Isla Finca, 3800 ft, *Heller 8946*. Santa Rita, 3750 ft, *Heller 9143*.

DISTRIBUTION AND ECOLOGY: Nicaragua and Costa Rica, at about 1000-1400 m altitude, in wet rainforest. Flowering in February and March, in cult. in Mexico and Costa Rica in July-September.

RECOGNITION: *Epidendrum phragmites* belongs to the Pleuranthium Group, characterized by the caespitose habit, cane-like and elongate stems, several short, lateral inflorescences, and the Phragmites Subgroup which has non-branching stems, subsessile, 1 or 2 flowered inflorescences, the flowers green or yellowish green, the ovary somewhat inflated and nearly hidden by 3-4 tubular, imbricating bracts. The species is recognized by the simple stems with spreading ovate-elliptic to ovate-lanceolate leaves, the 1-2 flowered inflorescences, the flowers pale green to yellowish green flowers, the lip entire (ovate) or rarely slightly 3-lobed, bicallose and bicuniculate, the clinandrium-hood prominent, semitubular. *Epidendrum lilijae* Foldats has somewhat branching stems with linear-lanceolate, acute leaves, lateral apparently 1-flowered inflorescences, the flowers green, the sepals connate at the base, the clinandrium short, not much longer than the apex of the column. *Epidendrum leonii* D.E.Benn. & Christenson has much shorter plantas (28-35 cm tall), with lanceolate, acute, leaves, a 2-flowered inflorescence with pale green flowers, the petals and lip with the tips white, the lip clearly 3-lobed, the midlobe triangular, the clinandrium-hood elongate, strongly dentate. *Epidendrum tripetalum* Hágsater & E.Santiago, from Nicaragua and Belize, has a 1-flowered inflorescence, somewhat smaller flowers (sepals 10 mm long), and a linear-lanceolate lip very similar in shape and size to the petals, but with a single thin, low keel that disappears before reaching the apex of the lip.

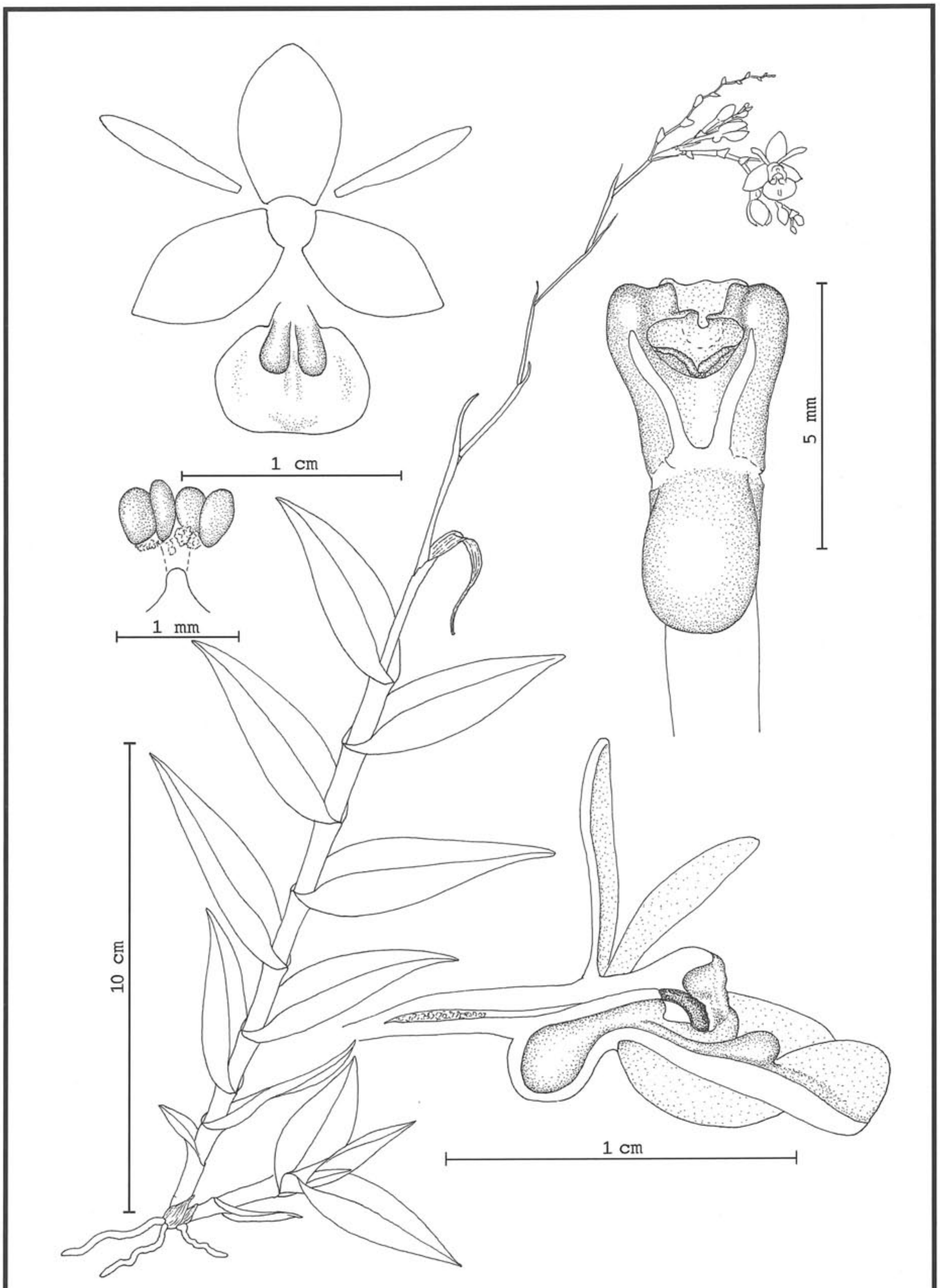


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek φραγμα, fence, screen, partition, and the ending ιτης, indicating a close connection. Possibly in reference to the reed-like stems which could suggest their use in putting together a fence.

REFERENCES: Hamer F., 1982. *Epidendrum phragmites* Heller & L. O. Williams, in Dodson, C. H., *ed.*, **Icon. Pl. Trop. 8**: pl 728. The Marie Selby Botanical Gardens. Sarasota, FL.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM PHYSODES Rchb.f.

Plate 1159

EPIDENDRUM PHYSODES Rchb.f. Gard. Chron. 1: 289. 1873.

Type: COSTA RICA: ***Zahn sub Veitch 240.*** Holotype: W 9350! Drawing of the type with notes and floral details by Reichenbach, W 4346! Tracing of the type with floral details and leaf by Ames, AMES!

Synonym: *Physinga physodes* (Rchb.f.) Brieger & Bicalho, Bradea 2: 233. 1978. *Physinga physodes* (Rchb.f.) Brieg., nom ileg. Die Orchideen, 3 ed. 1(9): 515. 1977.

Hierba epífita o litófita, simpodial, cespitosa, 17-28 cm de alto. **Raíces** basales, carnosas, delgadas, de 1-2 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados arriba, erectos a postrados, rectos, 9-13.5 x 0.2-0.6 cm. **Hojas** 9-11, distribuidas a lo largo del tallo, alternas, articuladas, insertadas a un ángulo de unos 45° al tallo; vainas tubulares, lateralmente aplanadas, finamente estriadas, teñidas de morado, 1-2 x 0.25-0.6 cm; lámina lanceolada, cortamente acuminada, diminutamente apiculada, carnoso suculenta, de color verde grisáceo en el haz y teñida de morado en el envés, margen entero, 3.5-7 x 0.6-1.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa cuando joven, produciendo racimos adicionales de diferentes nudos de la misma inflorescencia, entonces pluriracemosa, plurianual, laxa, 7-13 cm de largo; pedúnculo alargado, lateralmente aplanado, recto a ligeramente sinuoso, 8-9 cm de largo; provisto de 5-8 brácteas tubulares, acuminadas, de tamaño decreciente, escariosas, fibrosas con el tiempo, 0.5-4 cm de largo; raquis terete, delgado, recto. **Brácteas florales** más cortas que el ovario, anchamente infundibuliformes, 3 mm de largo. **Ovario** terete, delgado, liso, con una vesícula ventral, globular, muy prominente cerca del ápice, 7-8 mm de largo. **Flores** 3-12 por racimo, hasta 50 en toda la inflorescencia, sucesivas, una abierta a la vez por racimo, resupinadas, de color amarillo verdoso translúcido a crema rosado, el labelo rosáceo; fragancia nocturna a hipoclorito de calcio. **Sépalos** extendidos, libres, 5-nervados, margen entero, extendido, 5-8 x 3-4 mm; el **dorsal** elíptico, ápice obtuso, los **laterales** obovado elípticos, agudos, dorsalmente algo carinados. **Pétalos** extendidos, libres, linear oblanceolados, ápice redondeado a subagudo, 1-nervados, margen entero, extendido, 5-8 x 0.5 mm. **Labelo** unido a la columna, truncado en la base, subentero, en aspecto general transversalmente elíptico, ligeramente cóncavo, ápice truncado, margen entero, extendido, 3-5 x 4-7 mm; bicalloso, los callos prominentes, carnosos, redondeados; el disco con una quilla baja. **Columna** corta, recta, dilatada hacia el ápice, 3.5-4 mm de largo. **Clinandrio** corto, sin sobrepasar el cuerpo de la columna, carnoso, margen ligeramente crenado. **Antera** 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, algo más cortas que los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** triangulares, prominentes, ocupando más de la mitad de la cavidad estigmática. **Nectario** penetrando cerca de 1/3 del ovario, formando una vesícula muy prominente justo detrás del perianto, liso. **Cápsula** no vista.

Epiphytic or lithophytic, caespitose, sympodial **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, terete at the base, laterally compressed above, erect to prostrate, straight. **Leaves** 9-11, distributed throughout the stem, alternate, articulate, inserted at an 45° angle to the stem; sheaths tubular, laterally compressed, minutely striated, tinged purple; blade lanceolate, short-acuminate, minutely apiculate, fleshy-succulent, gray-green above, tinged purple below, margin entire. **Inflorescence** apical, racemose when first flowering, producing additional racemes from various nodes of inflorescence, then pluriracemose, flowering during several years, lax-flowered; peduncle elongate, laterally compressed, straight to slightly sinuous, provided with 5-8 tubular, acuminate bracts, progressively shorter, scarious becoming fibrous with time; rachis terete, thin, straight. **Floral bracts** shorter than the ovary, widely infundibuliform. **Ovary** terete, thin, smooth, with a prominent, globular, ventral vesicle towards the apex. **Flowers** 3-12 per raceme, up to 50 per inflorescence, successive, one open at a time per raceme, resupinate, translucent greenish yellow to creamy pink, the lip rosy; nocturnal fragrance of calcium hypochloride. **Sepals** spreading, free, 5-veined, margin entire, spreading; the dorsal sepals elliptic, apex obtuse, the lateral sepals obovate-elliptic, acute, somewhat dorsally carinate. **Petals** spreading, free, linear-oblanceolate, apex rounded to subacute, 1-veined, margin entire, spreading. **Lip** united to the column, subentire, base truncate, transversely elliptic in outline, slightly concave, apex truncate, margin entire, spreading; bicallose, the calli prominent, fleshy, rounded; the disc with a low keel. **Column** short, straight, dilated towards the apex: **Clinandrium-hood** short, without surpassing the body of the column, fleshy, margin slightly crenate. **Anther** 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles soft and granulose, somewhat shorter than the pollinia; viscidium semiliquid, transparent. **Rostellum** subapical, slit. **Nectary** penetrating about 1/3 of the ovary, forming a prominent, inflated vesicle behind the perianth, smooth.

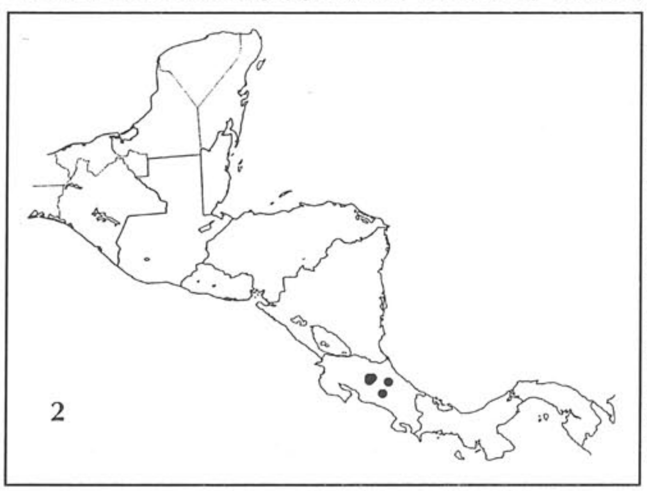
OTHER SPECIMENS: GUATEMALA: Alta Verapaz: Aldea Chajaneb, San Juan Chamelco*, 1400 m, *Archila s.n.*, AMO! **COSTA RICA: Alajuela:** Carrizal, 1700 m, XI 1937, *Valerio 2464*, AMES x2! **Cartago:** Río Birris between Cartago and Turrialba, 6000 ft, 7 X 1963, *Northen 5*, AMES! **Heredia:** above Sto. Domingo del Roble, 1600-1900 m, 8 IX 1936, *Goerger 10477*, AMES! MO! Río Porros, N of San Miguel, 1700 m, pressed cult. 28 IX 1961, *Horich 61-3-14*, US! Cordillera Central, cabecera del Río Porros, 1900 m, pressed cult. 25 VIII 1981, *Horich sub Hágsater 5289*, AMO x3! (Illustration voucher) Volcán Barva, cabecera del Río Porosatí, 2100 m, pressed cult. 30 VIII 1993, *Horich sub Hágsater 6760*, AMO x2! Paso Llano, 1700 m, 4 VIII 1990, *Rivera 448*, USJ! **San José:** S de Santa María de Dota, 10 IX 1958, *Lankester 14*, CR!

*Note: The specimen from San Juan Chamelco in Guatemala has the small lip.

OTHER RECORDS: COSTA RICA: [Alajuela:]: On slopes of Volcán Poás, 7200 ft, 4 IV 1974, *McCullough 1638*, flower card, AMO!

DISTRIBUTION AND ECOLOGY: Known only from central Costa Rica, along the upper reaches of the Cordillera Central and the western end of the Cordillera de Talamanca, epiphytic at 1400-2160 m altitude, and a single collection from Guatemala. Flowering throughout the year.

RECOGNITION: *Epidendrum physodes* belongs to the Physinga Group which is characterized by the generally small, caespitose plants, the inflorescence apical and racemose producing new racemes with time and thus pluriracemose, the successive flowers opening one at a time on an elongate peduncle with acuminate bracts, the lip entire and the ovary with a prominent vesicle. The species is recognized by the lanceolate, short-acuminate, gray-green, fleshy leaves, the lip transversely elliptic, somewhat concave, the calli prominent, rounded, the clinandrium-hood short, fleshy, not surpassing the body of the column. *Epidendrum polygonatum* Lindl. from the Antilles is very similar but has smaller flowers (sepals 3.5-5 mm long) and the widely obovate lip has evident, high, fleshy keels. *Epidendrum macroclinium* Hágsater has shorter (1.5-4.5 cm long), ovate-lanceolate, obtuse to acute, gray-green sometimes with the foliar veins thickened and very evident on the basal half of the upper side of the leaves, and obreniform lip, the calli short, placed far from the apex of the column, and a very prominent, fimbriate-dentate clinandrium-hood. *Epidendrum prostratum* (Lindl.) Cogn. is vegetatively very similar to the latter, but the sepals and petals are partly spreading, the base of the lip deeply cordate, with 3 prominent keels on the disc, and the clinandrium-hood deeply emarginate, the margin entire.

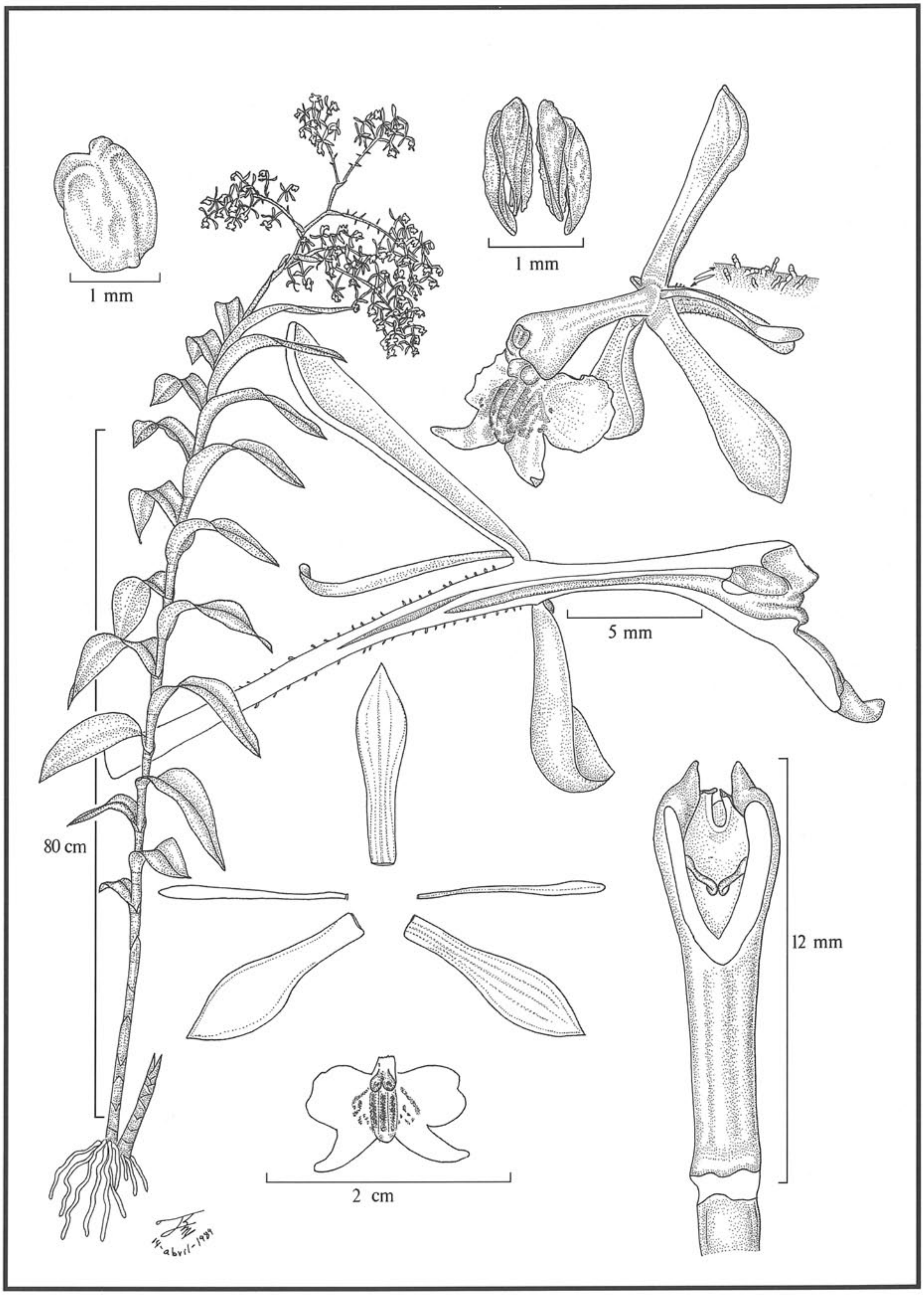


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek φυσα, bladder, bellows, forming a bladder or bellows, in reference to the inflated nectary that forms a prominent vesicle.

REFERENCES: Hágsater, E., 1987, Epidendra Nova et Criticae 2: *Epidendrum macroclinium,* una nueva especie del grupo Physinga, confundida con *Epidendrum physodes*, Orquídea (Mexico City) 10(2): 317-329.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM PILIFERUM Rchb.f.

Plate 1160

EPIDENDRUM PILIFERUM Rchb.f., Linnaea 41: 83. 1876.

Type: COSTA RICA: [PANAMA:] Chiriquí, ***Warscewicz s.n.*** Lectotype (here designated): W 49570! Isolectotype: W 49582!

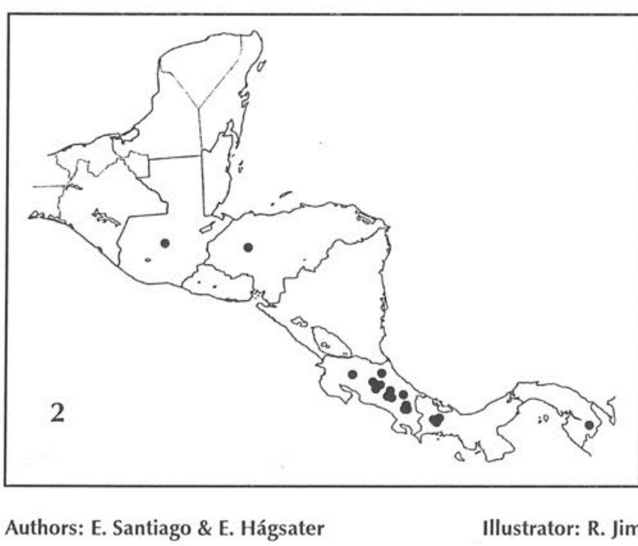
Hierba epífita o terrestre, simpodial, cespitosa, 50-120 [200] cm de alto. **Raíces** basales,delgadas, carnosas, 1-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes, erectos, rectos, 35-160 x 0.3-1.2 cm. **Hojas** hasta 23, distribuidas en los dos tercios apicales del tallo, articuladas, alternas, con las nervaduras claramente resaltadas; vainas tubulares, lisas, fibrosas con el tiempo, 15-50 x 5-12 mm; lamina elíptica, aguda, margen entero, [6]13.5-22.5 x 1.5-5.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, paniculada, arqueada-colgante, pluriflora, densa, 16-50 cm de largo; pedúnculo delgado, lateralmente aplanado, recto, 1-8 cm de largo; generalmente provisto de 1-3 brácteas prominentes, tubulares, acuminadas, 4-6.5 cm de largo; las brácteas de las ramificaciones, angostamente triangulares, acuminadas, abrazadoras, 1.5-6.3 cm de largo. **Brácteas florales** de tamaño variable, angostamente triangulares, acuminadas, abrazadoras, 3-30 mm de largo. **Ovario** terete, delgado, no inflado, 15-22 mm de largo, generalmente con algunos tricomas moniliformes. **Flores** 62-400, simultáneas, resupinadas, sépalos y mitad basal de la columna verdes, pétalos blancos o verdes, ápice de la columna y labelo blanco con manchas irregulares moradas, generalmente formando cinco líneas sobre el disco; sin fragancia. **Sépalos** reflexos, libres, carnosos, angostamente espatulado-oblanceolados, con la mitad apical cóncava, agudos, 3-5-nervados, dorsalmente rugosos, margen entero, extendido, 12.5-17 x 3.5-5 mm. **Pétalos** reflexos, libres, membranáceos, filiformes, el ápice algo más ancho, redondeado, 1-nervados, margen entero, extendido, 12.5-15 x 0.6-1.1 mm. **Labelo** unido a la columna, trilobado, convexo, algo cordado en la base, 6 x 12 mm; bicalloso, los callos prominentes, delgados; disco generalmente con 3 quillas carnosas, prominentes, la central alargada hasta el seno apical de la lámina; lóbulos laterales dolabriformes, margen irregular, 5 x 3 mm; lóbulo medio bilobado, los lóbulos angostos, fuertemente divaricados, 3 x 12 mm. **Columna** recta, delgada, 10-12 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, tipo ala de pájaro, fuertemente comprimidos lateralmente, el par interior ligeramente más corto; caudículas del mismo largo que los polinios interiores, laminares. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, de ½ del largo de la cavidad estigmática. **Nectario** penetrando ligeramente el ovario justo detrás del perianto, delgado, no inflado, liso. **Cápsula** elipsoide, con el perianto persistente; cuerpo 16-30 x 6.1-12.5 mm; pedicelo delgado, terete, 13-15 mm de largo; cuello apical 10-11 mm de largo.

Epiphytic or terrestrial, sympodial, caespitose **herb. Roots** basal, fleshy. **Stems** simple, cane-like, terete, erect, straight. **Leaves** up to 23, distributed throughout the apical 2/3 of the stem, alternate, the veins clearly marked; sheaths tubular, becoming fibrous with time; blade elliptic, acute, margin entire. **Inflorescence** apical, flowering only once, paniculate, arching-nodding, densely many-flowered; peduncle thin, laterally compressed, generally provided with 1-3 prominent, tubular, acuminate bracts; the bracts of the branches narrowly triangular, acuminate. **Floral bracts** variable in size, narrowly triangular, acuminate. **Ovary** terete, not inflated, generally with scarce, moniliform trichomes. **Flowers** 62-400, simultaneous, sepals and the basal half of the column green, petals white to green, apex of the column and lip white with irregular purple dots, generally forming 5 lines on the disc; not fragrant. **Sepals** reflexed, free, fleshy, narrowly spatulate-oblanceolate, the apical half concave, acute, 3-5-veined, dorsally rugose, margin entire. **Petals** reflexed, free, membranaceous, filiform, the apex somewhat wider, rounded, 1-veined, margin entire. **Lip** united to the column, 3-lobed, convex, bicallose, the calli prominent, thin; disc usually with 3 fleshy, prominent keels, the mid-keel elongate, reaching the apical sinus of the lip; lateral lobes dolabriform, margin irregular, midlobe bilobed, the lobes narrow, strongly divaricate. **Column** straight, thin. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, "bird-wing" type, strongly laterally compressed, the inner pair slightly smaller; caudicles as long as the inner pollinia, laminar. **Rostellum** apical, slit. **Nectary** slightly penetrating the ovary, just behind the perianth, not inflated. **Capsule** ellipsoid, perianth persistent, pedicel thin, terete, with an apical neck.

OTHER SPECIMENS AND RECORDS: See appendix.

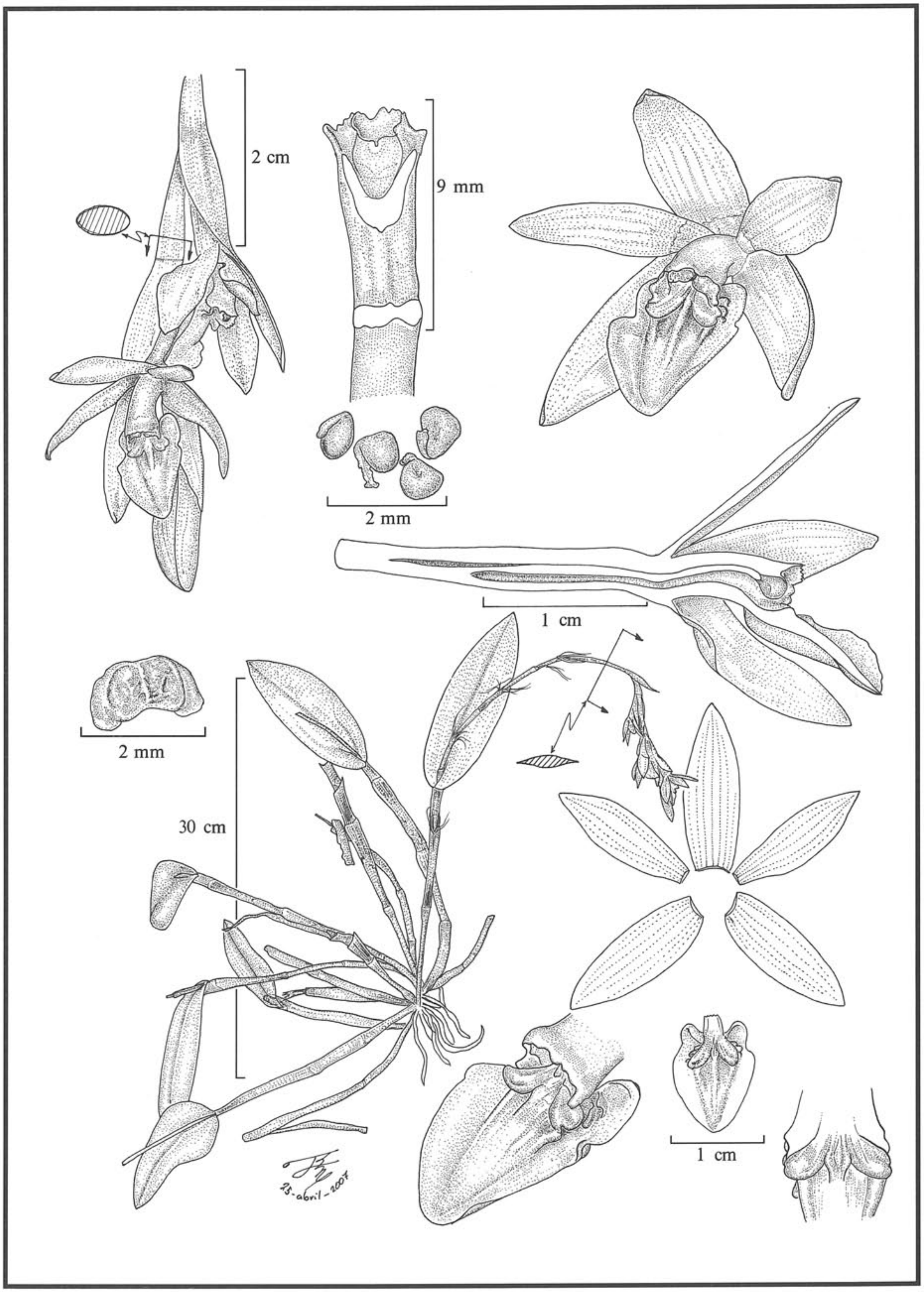
DISTRIBUTION AND ECOLOGY: Endemic to Costa Rica and Panama, on both the Atlantic and Pacific slopes, 1000-2500 m altitude. Flowering from March to July, in cultivation throughout the year. *The records from Guatemala and Honduras are both from cultivated plants, and we have not found any specimens other than those, so they may have actually come originally from Costa Rica through orchid expositions and trade.

RECOGNITION: *Epidendrum piliferum* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, and Paniculatum Subgroup, which has green and white flowers, often parked with purple on the disc of the lip and apex of the column. The species is recognized by the tall plants (up to 2 m), the arching-nodding inflorescence, with relatively large (sepals 12.5-17 mm long) green and white flowers, the disc marked with 5 lines of purple dots. *Epidendrum horichii* Hágsater from Costa Rica has shorter, generally epiphytic plants, with shorter, narrower leaves (3.5-15 cm long), with very similar flowers in shape and color, but smaller (sepals 7-10 mm long). *Epidendrum veroscriptum* Hágsater has similar flowers, but the lip is generally marked with purple dots in a semicircle around the disc, the ovary is scarcely furfuraceous, and ranges from central Mexico to Nicaragua.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *pilus*, hair, and the suffix *-fer*, -carrying, in reference to the scarce, short growths found on the ovary of this species.



EPIDENDRUM PITALENSE J.Linares & Hágsater

Plate 1161

EPIDENDRUM PITALENSE J.Linares *et* Hágsater *sp. nov.*

Type: EL SALVADOR-HONDURAS: Cima del cerro El Pital, alrededores de la torre de telecomunicaciones, 2700 m, selva baja perennifolia secundaria en el lado hondureño, epífita frecuente, en fruto, inflorescencia en desarrollo, 12 febrero 2007, ***Gerardo A. Salazar y José L. Linares 7517.*** Holotype: MHES! (Illustration voucher.)

Epidendro pallenti Rchb.f. simile sed floribus brunneo-purpureis, columna viridi, sepalis ovato-ellipticis subacutis brevioribus, labello pandurato-ovato rotundato longiore quam latiore, cum sex crassificationibus laminaribus brevibus infra callos, divergens.

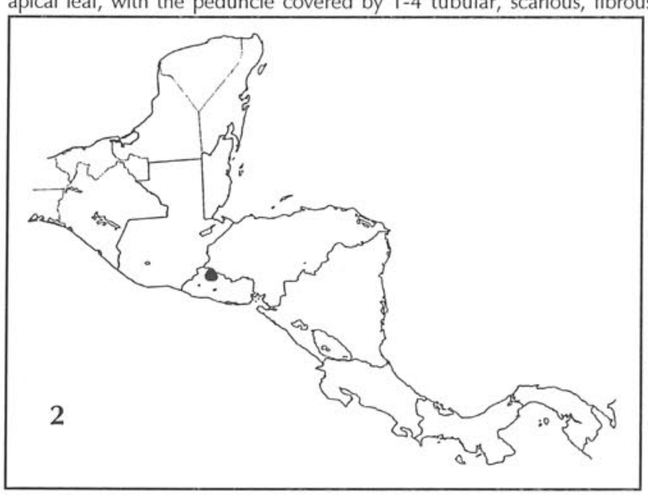
Hierba epífita, simpodial, cespitosa, 10-20 cm de alto. **Raíces** basales, delgadas, blancas, sinuosas, (tornándose grisáceas con la edad), 1.5-2.5 mm de grosor. **Tallos** sencillos, tipo caña, con 3-4 entrenudos, lateralmente aplanados, ancipitosos, delgados en la base y ligeramente más anchos hacia la parte media apical, ascendentes, verdes, 3-13 x 0.3-0.75 cm; cubiertos cuando jóvenes (en los 2/3 basales) por vainas no foliares, tubulares, agudas, algo ancipitosas, que se tornan escariosas y fibrosas con el tiempo, 25-55 x 4.7-7.5 mm. **Hojas** 1 o raramente 2, agregadas en el ápice del tallo, articuladas, ascendentes; vainas tubulares, lateralmente aplanadas, algo ancipitosas, verdes, 6-20 x 4.5-6.5 mm; lámina lanceolada a oblongo lanceolada, aguda, coriácea, con una quilla dorsal baja, margen entero, ligeramente deflexo, 5.2-12.5 x 2.2-4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, con las flores alternas, pauciflora, arqueada-péndula, 14-22 cm de largo; pedúnculo delgado, lateralmente aplanado, ancipitoso, recto, casi tan largo como la lámina foliar apical, parcialmente cubierto por 4 brácteas tubulares, agudas, escariosas y fibrosas, más largas que el entrenudo a partir del cual se originan, 4.5 cm de largo; raquis subterete, delgado, recto, 3-7 cm de largo. **Brácteas florales** prominentes, más largas que el ovario, oblicuamente tubulares, agudas, conduplicadas, imbricadas, de color verde tornándose pardas cuando las flores maduran, 20-30 mm de largo. **Flores** [1]3-4, simultáneas, dísticas, resupinadas, aparentemente cleistógamas, de color pardo purpúreo con la superficie dorsal de los segmentos florales algo teñida de verdoso; columna verde con el margen del clinandrio blancuzco; sin fragancia. **Ovario** semiterete, delgado, algo torcido, incipientemente bisulcado ventralmente, no ornamentado, 12-16 x 2.5-2.7 mm. **Sépalos** entreabiertos, libres, carnosos, flexibles, ovado elípticos, subagudos, 7-nervados, el par externo de nervaduras más corto, margen entero, extendido, 14-17 x 5.2-5.7 mm. **Pétalos** entreabiertos, libres, carnosos, angostamente elípticos, agudos, 5-nervados, margen entero, extendido, 15.7 x 4.7 mm. **Labelo** unido a la columna, entero, pandurado ovado, auriculado en la base, redondeado en el ápice, ligeramente más largo que ancho, margen entero, 11.5 x 8.5 mm; bicalloso, los callos laminares, incipientemente bilobados en el ápice, divaricados, desvaneciéndose de manera gradual con las 3 quillas del labelo y formando una sola quilla carnosa, triangular, aguda, que se alarga hasta el ápice de la lámina; disco tetracuniculado, (cada uno de los cunículos ubicado en ambos lados de cada callo), con 6 engrosamientos laminares, muy cortos, que sobresalen ligeramente por debajo de los callos. **Columna** ligeramente arqueada, delgada, semiterete, ligeramente engrosada hacia el ápice, con un diente pequeño, subagudo, de cada lado, debajo de la antera, 9 mm de largo. **Clinandrio** prominente, sobrepasando ligeramente el ápice de la columna, carnoso, margen irregularmente dentado. **Antera** reniforme, 4-locular, con una quilla dorsal. **Polinios** 4, ovoides, lateralmente comprimidos; caudículas granulosas más cortas que los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** penetrando ½ del ovario, delgado, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** basal, thin, white, sinuous. **Stems** simple, cane-like, with 3-4 internodes, laterally compressed, ancipitose, thin at the base, slightly thickened towards the apical half, ascending, green; covered when young by non-foliar, tubular, acute, somewhat ancipitose bracts which turn scarious and fibrous with age. **Leaves** 1, or rarely 2, aggregate towards the apex of the stem, articulate, ascending; sheaths tubular, laterally compressed, somewhat ancipitose, green; blade lanceolate to oblong-lanceolate, acute, coriaceous, with a low dorsal keel, margin entire, slightly deflexed. **Inflorescence** apical, flowering only once, racemose, few-flowered, arching nodding; peduncle thin, laterally compressed, ancipitose, straight, nearly as long as the apical leaf, partly covered by 4 tubular, acute bracts, becoming scarious and fibrous, longer than the respective internode; rachis subterete, thin, straight. **Floral bracts** prominent, much longer than the ovary, obliquely tubular, acute, conduplicate, imbricated, green turning brown when the flowers mature. **Flowers** [1]3-4, simultaneous, alternate, resupinate, apparently cleistogamous, purple-brown, with the dorsal surface of the floral segments somewhat greenish, especially at the base; column green with the margin of the clinandrium-hood whitish; without fragrance. **Ovary** semiterete, thin, somewhat twisted, slightly ventrally bisulcate, smooth. **Sepals** partly spreading, free, fleshy, flexible, ovate-elliptic, subacute, 7-veined, the outer pair of veins shorter, margin entire, spreading. **Petals** partly spreading, free, fleshy, narrowly elliptic, acute, 5-veined, margin entire, spreading. **Lip** united to the column, entire, pandurate-ovate, base auriculate, rounded at the apex, slightly longer than wide, margin entire; bicallose, the calli laminar, slightly bilobed at the apex, divaricate, turning gradually into the 3 keels of the lip and forming a single fleshy, triangular, acute keel at the apex, reaching the apex of the lip; disc 4-cuniculate, (each of the cunicula on the sides of each callus), with 6, laminar, very short thickenings that surface slightly bellow the calli. **Column** slightly arching, thin, semiterete, slightly thickened towards the apex, with a small, apical, subacute tooth on each side below the anther. **Clinandrium-hood** prominent, slightly surpassing the apex of the column, fleshy, margin irregularly dentate. **Anther** reniform, 4-celled, with a dorsal keel. **Pollinia** 4, ovoid, laterally compressed, caudicles granulose, shorter than the pollinia. **Rostellum** subapical, slit. **Nectary** penetrating half the ovary, thin, slightly inflated, smooth.

OTHER SPECIMENS: EL SALVADOR: Chalatenango: Cerca de la cima del cerro El Pital, entre el caserío y la antena de telecomunicaciones, ca 2600 m, 12 II 2007, *Salazar 7514*, MEXU!

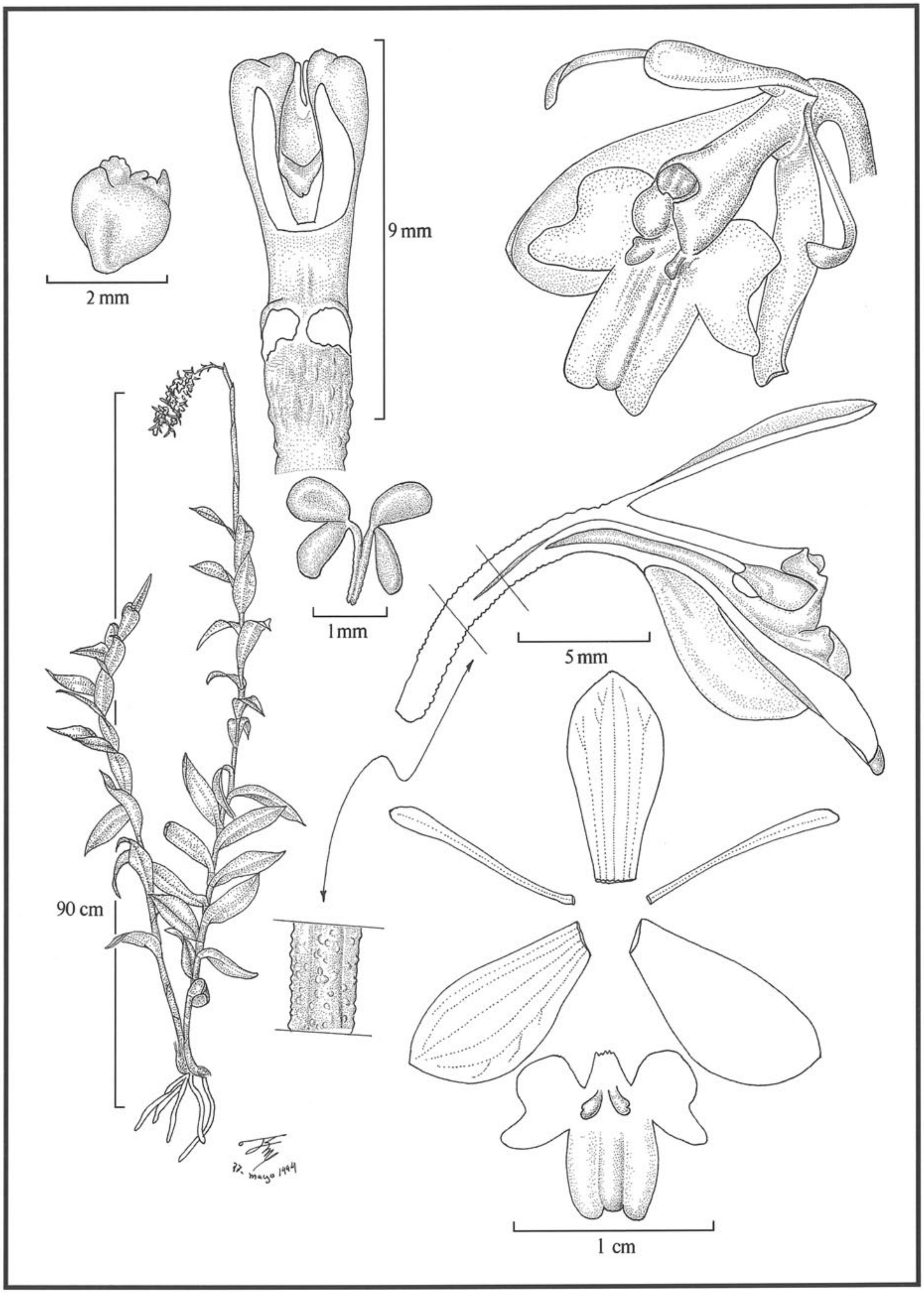
DISTRIBUTION AND ECOLOGY: Known only from the Cerro El Pital on the border between El Salvador and Honduras, In evergreen cloud forest with *Quercus, Pinus, Abies, Drymis, Tacus, Persea, Cupressus, Myrcia*, etc. Flowering in April-May.

RECOGNITION: *Epidendrum pitalense* belongs to the Bracteosum Group which is characterized by the sympodial, caespitose habit with laterally compressed, ancipitose, few-leaved stems covered by tubular, scarious sheaths, a racemose to paniculate, 3-11-flowered, arching inflorescence with prominent, acute floral bracts, the floral segments partly spreading, lip entire, generally auriculate at the base, the disc tricarinate and 4-cuniculate (on each side of the calli), and with fleshy-laminar thickenings beneath the calli; Pallens Subgroup which has 1-2 leaved stems, the leaves aggregate at the apex of the stem, inflorescence racemose, generally longer than the apical leaf, with the peduncle covered by 1-4 tubular, scarious, fibrous bracts, the floral bracts tubular, nearly parallel to the rachis. The species is recognized by the purple-brown flowers with a green column, sepals ovate-elliptic, subacute, 14-17 mm long, the lip pandurate-ovate, rounded, slightly longer than wide, with 6 laminar, very short thickenings bellow the calli. It is similar to *Epidendrum pallens* Rchb.f. which has pale olive-brown to lilac-pink flowers, oblong-lanceolate, acute sepals 18-24 mm long, the lip triangular ovate, acute, twice as long as wide, with a pair of laminar thickenings hidden by the calli. *Epidendrum paucifolium* Schltr. has fuchsia-magenta flowers, oblong-elliptic, rounded sepals 14-16 mm long, and the lip subquadrate-ovate, the apex truncate, nearly as long as it is wide. *Epidendrum bracteosum* Ames & C. Schweinf. has green flowers tinged copper, 3-4 leaved stems, the inflorescence short, cymbiform floral bracts, sepals elliptic-lanceolate, 9-12 mm long, petals spatulate oblanceolate.



CONSERVATION STATUS: Locally abundant, habitat conserved on the Honduras side of the border, apparently tolerant to disturbance. Geographically and ecologically restricted.

ETYMOLOGY: In reference to the Cerro El Pital, where the pretype was collected.



EPIDENDRUM POLYANTHUM Lindl.

Plate 1162

EPIDENDRUM POLYANTHUM Lindl., Gen. et Sp. Orch. 106. 1831.

Basionym: *Epidendrum polystachyum* Pav. ex Lindl., Gen. et Sp. Orch. 106. 1831. Type: [México:] "Nova Hispania", "J. Pavón", [*M. Sessé & J. Mociño s.n.*]. Holotype: BM! Isotype: *Sessé, Mociño, Castillo & Maldonado 4343*, MA! Photos: AMO! F! *Non E. polystachyum* Kunth.
Epidendrum bisetum Lindl., Edward's Bot. Reg. 27: misc. 68. 1841. Type: Guatemala, *Loddiges*. No record of type.
Epidendrum funiferum C. Morren, Ann. Soc. Roy. Agric. Gand 4: 211, t. 198. 1848. Type: [Brasil?:], Ste. Catherine, *A. DeVos & DeRyeke*, in hort. A. Verschaffelt. No specimen recorded. Lectotype (here designated): the illustration published in Ann. Soc. Roy. Agric. Gand 4: 211, t. 198. 1848. [Probably a mislabeled cultivated plant thought to have come from Brazil but actually from Mexico or Guatemala.]
Epidendrum heteroglossum Kraenzl., Kongl. Svenska Vetenskapsakad. Handl. 16(8): 19-20. 1921. Type: México: [Veracruz]: Am Vulcan Orizaba. *Hort. s.n.* Holotype: HBG, cited by Christenson (1994). There is a photograph of the type, mounted on sheet marked as type by Kraenzlin, with a note "Aus Mexiko importiert, bluehte in Wiessbaden in einer Privat samlung. Ober Gärtner Ehinger. Oktob. 1911. AMES 33707! Copy of photo at NY!

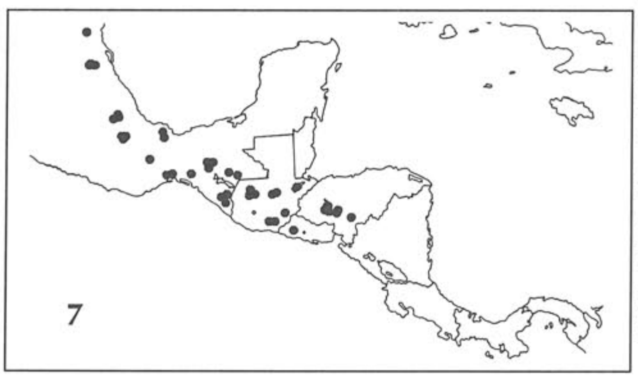
Hierba epífita, simpodial, cespitosa, erecta, 55-150 [300] cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, gruesas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes, algo lateralmente comprimidos en la mitad apical, 20-66 x 0.55-0.75 cm. **Hojas** 7-13, dísticas, distribuídas a lo largo del tallo; vaina foliar algo lateralmente comprimida, papiráceas cuando viejas y después de haber perdido el limbo, 2-4.5 cm de largo; lámina angostamente elíptico lanceolada, cortamente acuminada, mucronada, ligeramente carinadas, subcoriáceas, margen entero, extendido, 14-21 x 2-6 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, en primera floración, 20-33 cm de largo; produciendo nuevos racimos de los nudos del pedúnculo en años posteriores, y por lo tanto pluriracemosa; pedúnculo 6-12 cm de largo; cubie,to por 2-6 brácteas imbricadas, espaciadas hacia el ápice, oblongo triangulares, atenuadas, agudas, 2.5-4.5 cm de largo; racimos largos, densos, cilíndricos, con numerosas flores, raquis más o menos escabroso. **Brácteas florales** más cortas que el ovario, abrazadoras, ovado triangulares, agudas, 1-2 mm de largo. **Ovario** terete, liso a ligeramente verrugoso, 5-7 mm x 0.4-0.7 mm. **Flores** 15-40 por racimo, simultáneas, resupinadas, sépalos y pétalos amarillo anaranjados, labelo naranja pálido, columna blanca, fragancia herbácea, desagradable. **Sépalos** extendidos, libres, entreabiertos, elíptico obovados, mucronados, lisos a ligeramente verrugosos, margen entero, extendido, 8-10 x 2-3.2 mm; los **laterales** oblicuos, 8-10.3 x 3-4 mm. **Pétalos** entreabiertos, libres, filiformes, agudos, mucronados, margen entero, extendido, 9-9.3 x 0.2-0.4 mm. **Labelo** unido a la columna, trilobado, base truncada a cordada, carnoso, 5.5-6.5 x 4-7.3 mm; bicalloso, callos laminares, prominentes, carnosos, divergentes, pueden prolongarse o no hasta la mitad de la lámina del labelo; disco unicarinado, carina prominente, producida desde el ápice de la columna hasta el seno del lóbulo medio; lóbulos laterales bilobados a emarginados, formando dos lóbulos, los lóbulos basales suborbiculares, los lóbulos apicales suborbiculares a triangulares, angostamente redondeados, 1.5-2 x 2.5-3.2 mm; lóbulo medio oblongo cuadrado, margen entero, ápice bilobado con un mucrón amplio en el seno, 3-3.5 x 2-3.7 mm. **Columna** recta, obcónica, delgada en la base, 5-6 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obovoide, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que la longitud de los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/2 de la longitud de la cavidad estigmática. **Nectario** corto, penetrando de 1/3 a 1/4 el ovario, liso. **Cápsula** elipsoide, pedicelo 3.5-4 mm de largo, cuerpo 1.7-1.8 x 0.9-1.0 cm, cuello corto de 2 mm de largo.

Epiphytic, sympodial, caespitose, erect, tall **herb. Roots** basal, fleshy, thick. **Stems** cane-like, terete, somewhat laterally compressed. **Leaves** 7-13, distributed throughout the stems; sheath papery when old and after losing the limb; blade narrowly elliptic-lanceolate, short acuminate, mucronate, slightly carinate, subcoriaceous, margin entire, spreading. **Inflorescence** apical, racemose at first flowers, producing new racemes from the nodes of the peduncle and these becoming pluri-racemose; peduncle elongate, usually longer than the apical leaf, covered by 2-6 imbricating bracts, progressively spaced towards the apex, oblong-triangular, attenuate, acute; racemes long, dense, many-flowered, cylindrical. **Floral bracts** shorter than the ovary, ovate-triangular, acute. **Ovary** terete, short, smooth to slightly verrucose. **Flowers** 15-40 per raceme, simultaneous, resupinate, sepals and petals orange-yellow, lip white to pale orange, column, fragrance herbaceous, disagreeable. **Sepals** spreading, free, partly spreading, obovate-elliptic, obtuse, mucronate, smooth to slightly verrucose, margin entire, spreading, the lateral sepals oblique. **Petals** partly spreading, free, filiform, acute, mucronate, margin entire, spreading. **Lip** united to the column, 3-lobed, base truncate to cordate, fleshy; bicallose, callus laminar, prominent, fleshy, divergent, sometimes reaching the middle of the disc of the lip; disc carinate, keel prominent, running from the apex of the column to the apical sinus of the midlobe; lateral lobes bilobed, emarginate, the basal lobes suborbicular, the apical lobes suborbicular to triangular, narrowly rounded; midlobe oblong-quadrate, margin entire, apex bilobed, emarginate, widely mucronate **Column** straight, thin at the base, dilated towards the apex. **Clinandrium-hood** reduced, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** short, penetrating 1/3 to 1/4th of the ovary, smooth. **Capsule** ellipsoid, pedicel short, thin, with a short apical neck.

OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Widely distributed from Mexico (San Luis Potosí, Puebla, Veracruz, Jalisco, Guerrero, Oaxaca and Chaipas), Belize, Guatemala, Honduras and El Salvador; epiphytic in oak forest, high evergreen forest, seasonally evergreen forest, medium high forest, an occasionally on coffee and citrus plantations, 100-2160 m altitude. Flowering from January to August.

RECOGNITION: *Epidendrum polyanthum* belongs to the Anceps Group, which is characterized by the simple stems, generally elongate, compound racemose inflorescence producing new successive racemes with time, fleshy flowers, filiform to narrowly spatulate petals, and the Polyanthum Subgroup which has elongate, not subcorymbose racemes. The species is recognized by the terete stems, slightly compressed above, elongate inflorescence, racemose when first flowering, the becoming pluri-racemose, verrucose ovary, sepals 8-10.3 mm long, slightly verrucose, sepals and petals yellow-orange to orange-ochre, the lip white to pale orange, column white, fragrance herbaceous, disagreeable; the lateral lobes of the lip are semiovate, the margin slit, forming two lobes, the basal one semiobricular, the apical one semiorbicular to triangular, rounded; midlobe oblong-quadrate, the apex bilobed to slit. *Epidendrum verrucipes* Schltr., though similar, is distinguished by the evident longitudinal veins on the dry leaves, the yellow-orange to greenish yellow flowers, a very disagreeable fragrance, the ovary generally very verrucose-papillose, the sepals dorsally scarcely to densely verrucose-papillose, and the column white to pale orange. *Epidendrum martinezii* L. Sánchez & Carnevali has 1-2 cm wide leaves distributed along the apical half of the ítem, sepals and petals 7-8 mm long, yellow-orange, generally tinged with brown, the basal half of the column green, the apical half of the column and the lip white. *Epidendrum tuxtlense* Hágsater, García-Cruz & L. Sánchez, endemic from southern Veracruz and northern Oaxaca, has laterally compressed, ancipitose stems, compact racemes, sepals and petals 5-7.5 mm long, the lateral lobes of the lip suborbicular, entire, and the midlobe subquadrate, slightly wider towards the apex. *Epidendrum stallforthianum* Kraenzl., from Veracruz, has orange-brown flowers, the lip white and cream-colored, the fragrance disagreeable.

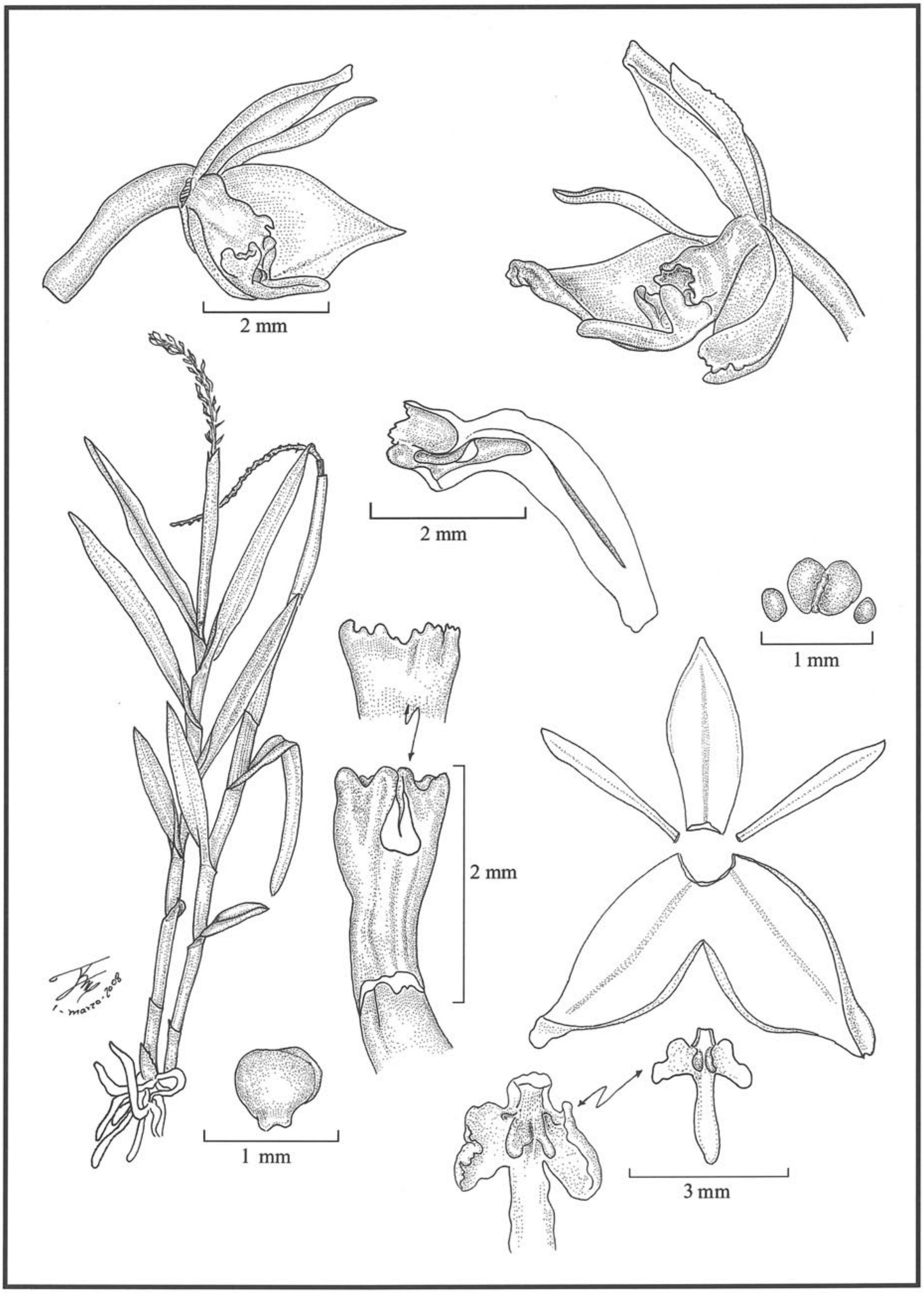


CONSERVATION STATUS: Common, widespread, of little horticultural interest.

ETYMOLOGY: From the Greek πολυ, many, and ανθος, flowers, in reference to the many-flowered inflorescence characteristic of this group of species.

REFERENCES: Christenson, E. A., 1994. Significant collections of Orchidaceae conserved in Herbarium Hamburgense (HBG). *Brittonia* 46(4): 344-354.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO México, D.F., MÉXICO



EPIDENDRUM POWELLII Schltr.

Plate 1163

EPIDENDRUM POWELLII Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17: 38. 1922.

Type: PANAMA: Chiriqui; Lino, c. 4000 Fuss ü. M., ***C. W. Powell 228***. Holotype: B, destroyed. Lectotype designated by Christenson, 1991, AMES 23808, here rejected.* Lectotype (here designated): Tracing** AMES 26768! (Floral details of tracing published in Repert. Spec. Nov. Regni Veg. Beih. 59 (2): t. 55, no. 218. 1931.)

Hierba epífita, simpodial, cespitosa, erecta, 22-37 cm de alto. **Raíces** basales, delgadas, ca. 1.3-2.5 mm de grosor. **Tallos** sencillos, tipo caña, delgados, teretes muy en la base y lateralmente aplanados hacia la parte foliosa, sinuosos, 13-21 x 0.2-0.6 cm; cubiertos en la porción basal por vainas no foliosas, tubulares, escariosas, fibrosas con el tiempo, 2-4.7 cm de largo. **Hojas** 3-6, distribuidas en los 2/3 apicales del tallo, dísticas, articuladas, suberectas, desiguales en tamaño (la basal muy pequeña); vainas tubulares, ancipitosas, estriadas, 1.5-4 x 0.3-0.7 cm; lámina linear-elíptica a linear lanceolada, aguda, diminutamente apiculada, margen entero, 2.8-12.5 [16] x 0.5-1.3 cm. **Brácteas espatáceas** 1 a 2, tubulares, conduplicadas, ancipitosas, agudas, imbricadas, 5-10 cm de largo. **Inflorescencia** apical, racemosa, erecta a ligeramente arqueada, florece una sola vez, pluriflora, cilíndrica, densa, 8-16 cm de largo; pedúnculo lateralmente aplanado, ancipitoso, recto, oculto casi en su totalidad por las brácteas espatáceas, 3-8 cm de largo. **Brácteas florales** más largas que el ovario a más cortas que éste, linear lanceoladas, acuminadas, abrazadoras, 2-5 mm de largo. **Flores** 30-50, pequeñas, simultáneas, resupinadas, carnosas, verdosas a amarillo-naranja. **Ovario** terete, delgado, no inflado, no ornamentado, 2.5-4 mm de largo. **Sépalos** entreabiertos, libres, cortamente acuminados, 3-nervados, margen entero, extendido; el **dorsal** oblongo elíptico, 2.8-3.2 x 1.2-1.4 mm; los **laterales** obovados, fuertemente oblicuos, con una quilla dorsal prominente, 3.5-4 x 1.8-2 mm. **Pétalos** entreabiertos, libres, lineares, agudos, 1-nervados, oblicuos, margen entero, 2.3-3 x 0.2-0.3 mm. **Labelo** unido a la columna, trilobado, base profundamente cordada, bicuniculada, 1.5-2.5 x 2-2.5 mm; bicalloso, los callos delgados, alargados hasta la base del lóbulo medio; disco con un cunículo a cada lado de los callos y desprovisto de quillas; lóbulos laterales dolabriformes, margen ondulado, abrazando ligeramente la columna en posición natural, 1.2 x 1 mm; lóbulo medio ensiforme, agudo, margen entero, 1.2 x 0.5 mm. **Columna** corta, gruesa, recta, con un par de alas redondeadas pequeñas, 1.3-2 mm de largo. **Clinandrio** corto, entero, con el margen ligeramente crenulado. **Antera** reniforme, cortamente bidentada. **Polinios** ovoideos, lateralmente aplanados. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** globosa, pedicelo muy corto; cuerpo 6 x 6 mm; cuello apical muy corto.

Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, thin. **Stems** simple, cane-like, thin, terete at the very base, laterally compressed towards the foliose part, sinuous; the basal portion covered by non-foliar, tubular, scarious, becoming fibrous with time. **Leaves** 3-6, distributed along the apical 2/3 of the stem, distichous, articulate, suberect, unequal in size (the basal leaf very small); sheaths tubular, ancipitose, striated; blade linear-elliptic to linear-lanceolate, acute, minutely apiculate, margin entire. **Spathaceous bracts** 1-2, tubular, conduplicate, ancipitose, acute, imbricating. **Inflorescence** apical, racemose, erect to slightly arching, flowering only once, densely many-flowered, cylindrical; peduncle laterally compressed, ancipitose, straight, nearly totally hidden by the spathaceous bracts. **Floral bracts** longer to shorter than the ovary, linear-lanceolate, acuminate. **Flowers** 30-50, small, simultaneous, resupinate, fleshy, greenish to orange-yellow. **Ovary** terete, thin, not inflated, smooth. **Sepals** partly spreading, free, short-acuminate, 3-veined, margin entire, spreading; dorsal sepals oblong-elliptic; lateral sepals obovate, frequently oblique, with a prominent dorsal keel. **Petals** partly spreading, free, linear, acute, 1-veined, oblique, margin entire. **Lip** united to the column, 3-lobed, base deeply cordate, bicuniculate; bicallose, the calli thin, elongate, reaching the base of the midlobe, disc with a cuniculus on each side the calli, lacking keels; lateral lobes dolabriform, margin undulate, partly embracing the column in natural position; midlobe ensiform, acute, margin entire. **Column** short, thick, straight, with a pair of small, apical rounded wings. **Clinandrium-hood** short, entire, the margin slightly crenulate. **Anther** reniform, apex short-bidentate. **Pollinia** ovoid, laterally compressed. **Rostellum** apical, slit. **Capsule** globose, pedicel very short, apical neck very short.

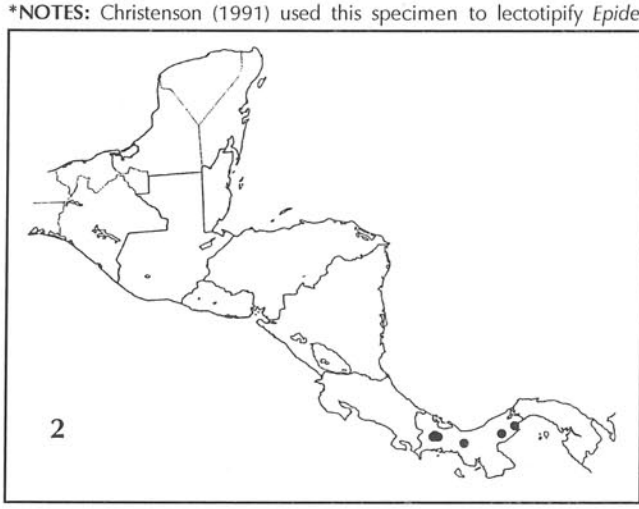
OTHER SPECIMENS: PANAMÁ: Chiriquí: Cerro Horqueta, ca. 1650 m, 13 VIII 1974, *Croat 26945*, MO! Cerro Azul, east of Boquete, ca. 1450 m, 11 VIII 1974, *Croat 26738*, MO! Boquete, Finca Collins, 5500 ft, 24 VII 1959, *Stern 1106*, MO x2! (Illustration voucher)

NON CONFIRMED SPECIMENS (flowers not dissected): PANAMÁ: Chiriquí: Boquete, Finca Collins, 6000 ft, 3 VIII 1960, *Ebinger 731*, MO (sterile)! Vicinity of Cerro Colorado mine, above Chami Camp, ca. 1300 m, 11 IV 1986, *McPherson 8787*, MO! **Coclé:** Hills south of El Valle de Anton, 600-800 m, *Allen 2797*, AMES! **Panamá:** Capira, Cerro Campana in forest north of radio Tower, 11 XI 1978, *Hammel 5567*, MO!

DISTRIBUTION AND ECOLOGY: Endemic to central and western Panama, at [600-800] 1200-1800 m altitude. Flowering July to November.

RECOGNITION: *Epidendrum powellii* belongs to the Alpicolum Group and Subgroup which is characterized by the simple, cane-like stems, long, narrow 1-2 spathaceous bracts, fox-tail-like inflorescence and numerous flowers with fleshy lip, triangular midlobe and roundish lateral lobes. The species is recognized by the 1-veined sepals, column truncate, the body and clinandrium hood even, margin of clinandrium hood slightly crenulate, totally covering the anther, lateral lobes of the lip small, dolabriform, midlobe longer than the lateral lobes, ensiform. It has been confused with *Epidendrum arcuiflorum* Ames & C. Schweinf. which is vegetatively very similar, but florally distinct, the sepals 3-veined, column with a pair of very prominent, rounded lateral wings, much reduced, bifid clinandrium-hood which leaves the anther totally exposed, lateral lobes of the lip ovate, midlobe lanceolate, subtriangular, shorter than the lateral lobes.

***NOTES:** Christenson (1991) used this specimen to lectotipify *Epidendrum powellii*, but after dissecting a flower thereof, we are convinced that it does not correspond to this species, and that *Powell 228* represents a mixed collection, and specimens AMES 23808 and MO correspond to *Epidendrum arcuiflorum*. Only the B specimen, illustrated under the supervision of Schlechter, and a tracing of which is found at AMES, corresponds to *E. powellii*.**The Vienna Code, (Art. 37.4) does not permit the use of illustrations as type of a name of a new species after 1 January 2007. However this lectotipification refers to a previously validly published new species, so the limitation of the code does not apply.

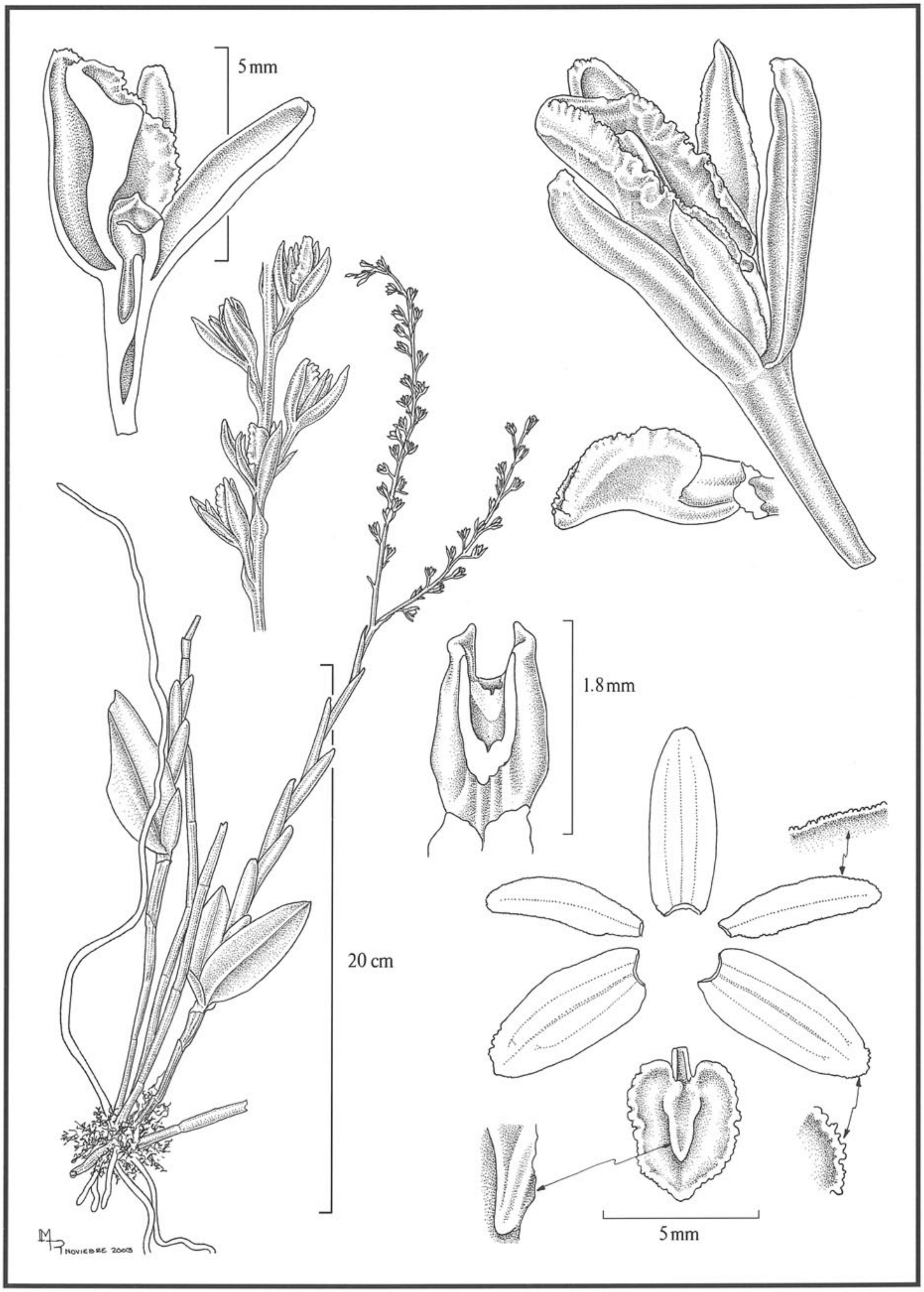


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Charles W. Powell (1854-1927), American botanist and orchid collector who lived in Panama in the first half of the 20th Century. He sent much material to be determined by Oakes Ames, R.A. Rolfe and R. Schlechter.

REFERENCES: Christenson, E.A., 1991, Mesoamerican Orchid Studies II: Powell's Panamanian Orchidaceae, **Lindleyana** 6 (3): 124-132. Williams, L. O., P. H. Allen, 1980 (facsimile ed.) Orchids of Panama, **Monog. Syst. Bot. Missouri Bot. Gard.** 4: 298.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO México, D.F., MÉXICO



EPIDENDRUM PROBIFLORUM Schltr. **Plate 1164**

EPIDENDRUM PROBIFLORUM Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17: 39. 1922.

Type: PANAMA: Chiriquí, 4500 ft, ***C. W. Powell 250***. Holotype: B, destroyed. Lectotype (designated by Christenson, 1991): AMES 27066! Isolectotype: MO 956056! (Illustration of flower, AMO!)

Hierba epífita, simpodial, cespitosa, erecta, de [8-11] 33 cm de alto. **Raíces** basales, delgadas, carnosas, 1.5-2 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados hacia el ápice, rectos, 3-9 x 0.2-0.6 cm; cubiertos en los 2/3 basales por vainas tubulares no foliares, escariosas y fibrosas con el tiempo, 13-20 mm de largo. **Hojas** 2-4, agregadas en el tercio apical de los tallos, desiguales en tamaño (la basal muy pequeña), suberectas, articuladas, dísticas, coriáceas; vainas tubulares, lateralmente comprimidas, 3-7 x 3-5.2 mm; lámina oblongo lanceolada a ovado lanceolada, aguda, margen entero, 3.4-6 x 0.7-2.2 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa a paniculada, florece una sola vez, erecta a ligeramente arqueada, 7-27 cm de largo; pedúnculo lateralmente aplanado, algo ancipitoso, recto a flexuoso, 4-13 cm de largo; oculto casi en su totalidad por 3-9 brácteas tubulares, agudas a subagudas, ancipitosas, parcialmente imbricadas, 8-30 mm de largo; raquis delgado, lateralmente aplanado, recto, 3-14 cm de largo. **Brácteas florales** tan largas como el ovario a más cortas que este, triangular-lanceoladas, cortamente acuminadas, abrazadoras, 2-6 mm de largo. **Flores** 8-60, sucesivas, los botones florales abriendo desde la base hacia el ápice del raquis, resupinadas, flores pardo purpúreas a crema durazno con labelo blanco; sin datos de fragancia. **Ovario** terete, delgado, no inflado, liso, 3-6 mm de largo. **Sépalos** libres, entreabiertos, oblongo elípticos, subagudos, 3-nervados, margen extendido, 4.6-6 x 1.4-2.6 mm; el **dorsal** con el margen entero; los **laterales** ligeramente oblicuos, con el margen dorsal ligeramente eroso-crenado hacia el ápice. **Pétalos** libres, entreabiertos, oblongos a oblongo lanceolados, oblicuos, subagudos a redondeados, 1-nervados, agudos, margen eroso, extendido, 4.2-5.2 x 0.7-1 mm. **Labelo** unido a la columna, entero, conduplicado en posición natural, cordado en la base, ovado triangular, agudo a subagudo, margen eroso-crenado, extendido, 2.8-4 x 3.5-4.5 mm; ecalloso; con una quilla prominente, carnosa, cóncavo-sulcada, que se desvanece antes de llegar al ápice de la lámina. **Columna** ligeramente arqueada en la base, corta, gruesa, con un par de alas laterales redondeadas, 2 mm de largo. **Clinandrio** reducido, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, ovoideos, angostos, desiguales, caudículas suaves y granulosas, mas cortas que los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando ½ de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, no inflado, no ornamentado. **Cápsula** no vista.

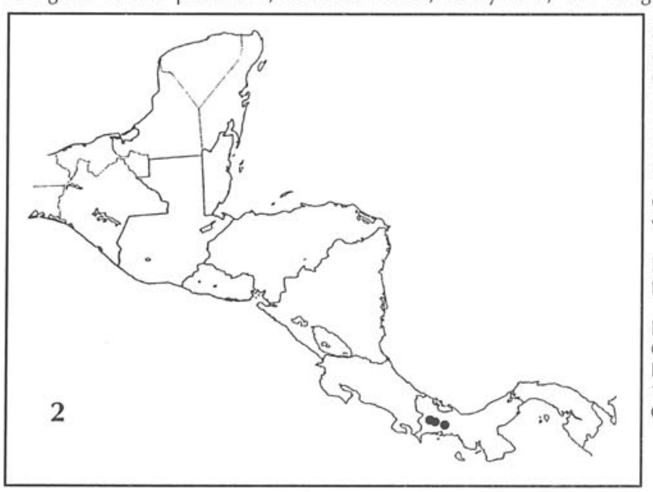
Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, thin, fleshy. **Stems** simple, cane-like, terete at the base, laterally compressed towards the apex, straight; the basal 2/3 covered by non-foliaceous, scarious, tubular sheaths, becoming fibrous with time. **Leaves** 2-4, aggregate along the apical 1/3 of the stem, unequal in size, the basal leaf smaller, suberect, articulate, distichous, coriaceous; sheaths tubular, laterally compressed; blade oblong-lanceolate to ovate-lanceolate, acute, margin entire. **Inflorescence** apical, racemose to paniculate, flowering only once, erect to slightly arching; peduncle laterally compressed, somewhat ancipitose, straight to flexuous, nearly totally hidden by 3-9 tubular, acute to subacute, ancipitose, partly imbricating bracts; rachis thin, laterally compressed, straight. **Floral bracts** as long as the ovary or shorter, triangular-lanceolate, short-acuminate. **Flowers** 8-60, the opening from the base of the inflorescence towards the apex, resupinate, tepals purple-brown to creamy peach, the lip white. **Ovary** terete, thin, not inflated, smooth. **Sepals** free, partly spreading, oblong-elliptic, subacute, 3-veined, margin spreading; the margin of the dorsal sepal entire, the lateral sepals slightly oblique, the dorsal margin slightly erose-crenate towards the apex. **Petals** free, partly spreading, oblong to oblong-lanceolate, oblique, subacute to rounded, 1-veined, acute, margin erose, spreading. **Lip** united to the column, entire, conduplicate in natural position, base cordate, ovate-triangular, acute to subacute, margin erose-crenate, spreading; ecallose, with a prominent, fleshy, concave-sulcate keel which disappears before reaching the apex of the lip. **Column** slightly arching at the base, short, thick, with a pair of lateral, rounded wings. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, narrow, unequal, caudicles soft and granulose, shorter than the pollinia. **Rostellum** subapical, slit. **Nectary** penetrating 1/3 of the ovary, not inflated, smooth.

OTHER SPECIMENS: Without locality data, Hort. San Francisco, California, *Staal s.n.*, AMO! **PANAMÁ: Chiriquí:** Boquete, E of Río Caldera, 4500-6500 ft, *Allen 4668*, AMES! (Illustration voucher) Boquete, 3800 ft, 24 VII 1938, *Davidson 1058*, AMES! F! US! (spirit and illustration of floral parts, AMO!)

OTHER RECORDS: Without locality data, Hort. San Francisco, California, *Staal s.n.*, digital photos and illustration, AMO.

DISTRIBUTION AND ECOLOGY: Known only from Chiriquí, Panama, epiphytic, 1140-1350 [1900] m. Flowering from July to September.

RECOGNITION: *Epidendrum probiflorum* belongs to the Carolii Group which is characterized by the caespitose habit, short, unbranched, laterally compressed stems, thick, coriaceous leaves, and the long, arching, nutant, rat-tail-like inflorescence with a long bracts at the base, and the numerous, successive flowers. The species is recognized by the generally paniculate inflorescence, oblong-lanceolate to ovate-lanceolate leaves, up to 60 purple-brown to creamy peach colored flowers and the lip white, ovate-triangular with a prominent, concave-sulcate, fleshy keel, the margin erose-crenate. *Epidendrum carolii* Schltr. has a shorter, racemose, arching inflorescence with up to 23 copper colored flowers tinged with purple, the lip yellow, widely ovate to reniform, with a fleshy, non-sulcate keel, and the entire margin slightly erose-crenate. *Epidendrum laucheanum* Rolfe ex Bonhof, has much larger plants, long, narrowly lanceolate, acuminate leaves, a many-flowered (up to 80), racemose, arching-nodding inflorescence, with ochre to purple-brown flowers, the lip apple-green, the margin entire.

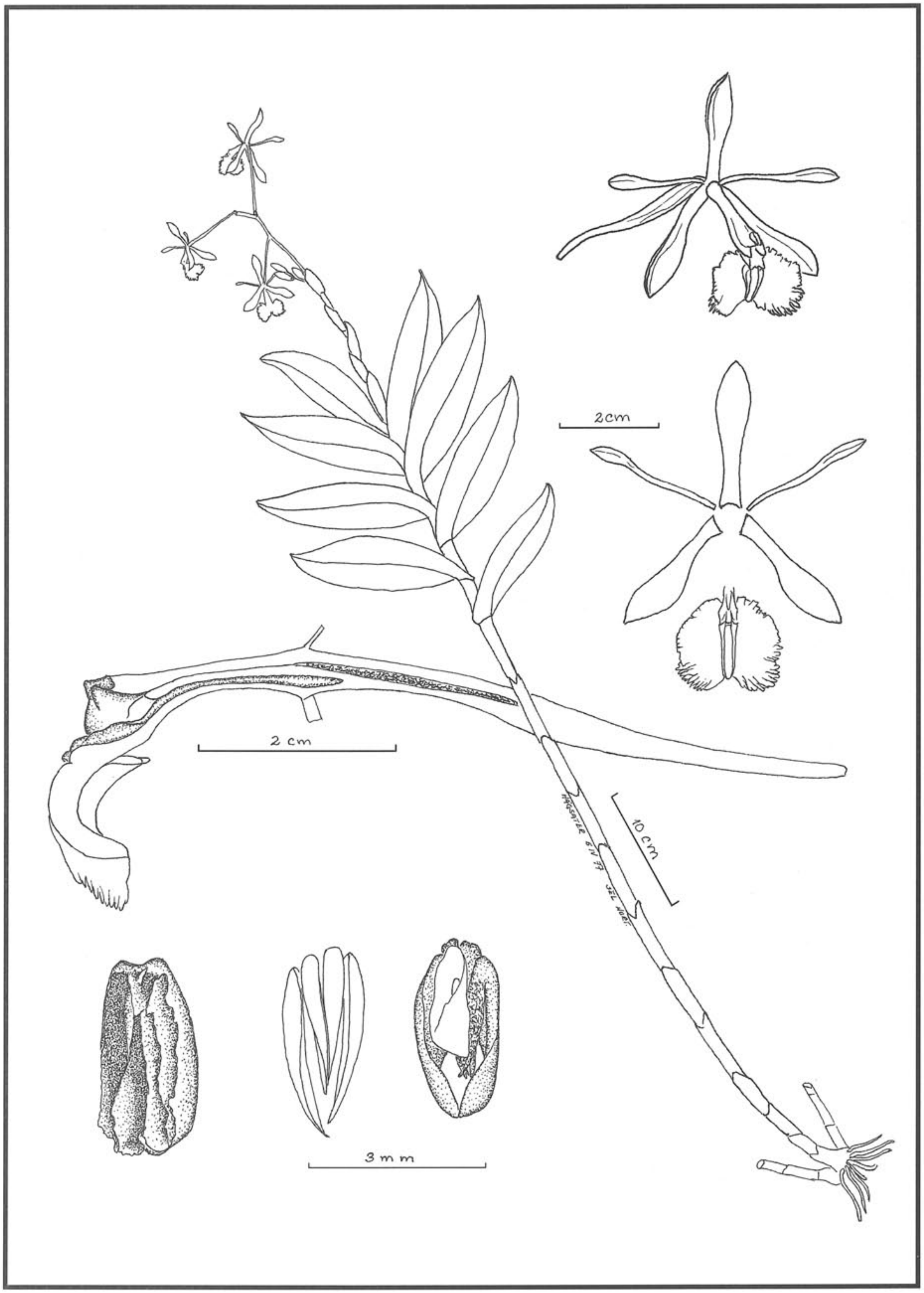


CONSERVATION STATUS: DD. Data deficient, apparently very rare and endemic.

ETYMOLOGY: From the Latin *probus*, having honest flowers.

REFERENCES: Christenson, E. A., 1991, Mesoamerican Orchid Studies II: Powell's Panamanian Orchidaceae, **Lankesteriana** 6(3): 128; Williams, L.O. and P. H. Allen, 1946. **Orchidaceae** in **Flora of Panama**, Ann. Missouri Bot. Gard. 33: 367.

Authors: E. Santiago & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM PSEUDEPIDENDRUM Rchb.f. **Plate 1165**

EPIDENDRUM PSEUDEPIDENDRUM Rchb.f., Xenia Orch. 1: 160, t. 53. 1856.

Basionym: *Pseudepidendrum spectabile* Rchb.f., Bot. Zeit. (Berlin) 10(42): 733. 1852. Type: PANAMA: Cordilleren von Chiriqui, 4000 ft, ***Warscewicz 16***. Holotype: W 49597! The labels on the holotype correspond to *Zahn 63*, mounted on sheet W 49598. The label on sheet W 49598, [*Warscewicz*] 16, in Reichenbach´s handwriting, corresponds to the holotype. Neither *Epidendrum spectabile* Focke (=*Encyclia*), nor *Epidendrum spectabile* (Batem. Ex Lindl.) Rchb.f. (=*Barkeria*).

Hierba epífita, simpodial, cespitosa, 50-200 cm de alto o más. **Raíces** basales, carnosas, delgadas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados hacia el ápice, erectos, rectos, 50-200 x 1-1.5 cm. **Hojas** 6-10, distribuidas a lo largo del tercio apical del tallo, articuladas, alternas; vainas tubulares, lateralmente aplanadas, finamente estriadas, en ocasiones teñidas de púrpura, 1-3 x 1-1.5 cm; lámina elíptica, aguda, subcoriácea, margen entero, extendido, 5-20 x 2-6 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, corta, erecta a raramente arqueada, racemosa, produciendo racimos nuevos (durante varios años) del mismo pedúnculo y por lo tanto pluriracemosa, pauciflora, laxa, 8.5 cm de largo; pedúnculo delgado, lateralmente aplanado, recto, 7 cm de largo, provisto de 2-4 brácteas, que lo cubren parcialmente, (la basal semejante a una bráctea espatácea) tubulares, algo ancipitosas, agudas, de tamaño decreciente, algo imbricadas, 1.8-3.5 cm de largo; raquis corto, recto, 1.5 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, agudas, abrazadoras, 4-14 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 48-50 mm de largo. **Flores** 1-6, simultáneas, resupinadas, sépalos y pétalos verde oscuro, el labelo anaranjado, lustroso, de consistencia plástica, columna verde oscuro con el ápice rojo a violáceo; fragancia débil a flor de cañagria (Costa Rica, fide R. L. Rodríguez). **Sépalos** extendidos, raramente algo reflexos, libres, oblanceolados, agudos, cóncavos hacia el ápice, 9-nervados, carnosos, margen entero, extendido, 22-33 x 5-7 mm; los **laterales** algo oblicuos. **Pétalos** extendidos a ligeramente reflexos, libres, linear oblanceolados, agudos, 3-nervados, margen entero, extendido, 22-30 x 2-3 mm. **Labelo** unido a la columna, entero, muy carnoso, casi plástico, convexo, subcuadrado a subrectangular, retuso, truncado en la base, margen crenado en la base a cortamente laciniado en el ápice, extendido, 14-17 x 16-19 mm; bicalloso, los callos delgados carnosos, algo rugosos, con una quilla muy corta entre ambos; disco provisto de 3 a 5 quillas carnosas, delgadas, paralelas, que recorren todo el disco hasta el seno apical de la lámina. **Columna** delgada, recta, 20 mm de largo. **Clinandrio** reducido, la antera expuesta casi en su totalidad, margen entero. **Antera** angostamente ovoide, 4-locular. **Polinios** 4, tipo "ala de pájaro", fuertemente comprimidos lateralmente, los interiores más pequeños; caudículas laminares, algo más cortas que los polinios, tridentadas en el ápice. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** corto, apenas penetrando el ovario, no inflado, liso. **Cápsula** no vista.

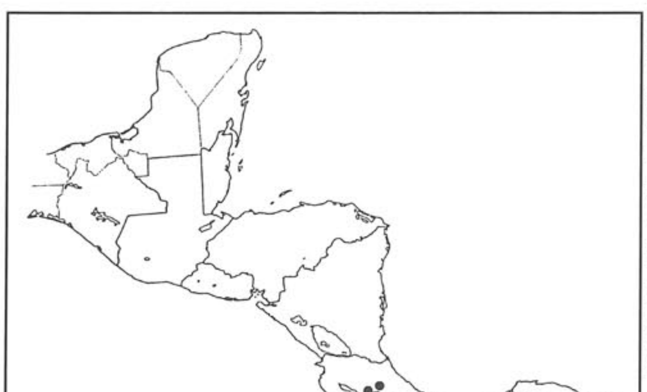
Epiphytic, sympodial, caespitose, tall **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, terete at the base and laterally compressed towards the apex, erect, straight. **Leaves** 6-10, distributed throughout the upper 1/3 of the stems, articulate, alternate; sheaths tubular, laterally compressed, minutely striated, ocasionally tinged purple; blade elliptic, acute, subcoriceous, margin entire, spreading. **Inflorescence** apical, short, erect to rarely arching, racemose, producing new racemes over several years from the same peduncle and thus pluri-racemose, few-flowered, about as long as the apical leaf; peduncle thin, laterally compressed, straight, provided and partially covered by 2-4 bracts, the lower sometimes similar to a sptachaceous bract, tubular, somewhat ancipitose, acute, decreasing in size, somewhat imbricating; rachis short, straight. **Floral bracts** much shorter than the ovary, narrowly triangular, acute. **Ovary** terete, thin, long, not inflated, smooth. **Flowers** 1-6, simultaneous, resupinate, sepals and petals dark green, lip solid orange, lustrous, of a plastic consistency, column dark green with the apex red to violaceous; fragrance weak, of "flor de cañagria". **Sepals** spreading, rarely somewhat reflexed, free, oblanceolate, acute, concave near the apex, 9-veined, fleshy, margin entire, spreading; the lateral sepals somewhat oblique. **Petals** spreading to slightly reflexed, free, linear-oblanceolate, acute, 3-veined, margin entire, spreading. **Lip** united to the column, entire, very fleshy, nearly plastic, convex, subquadrate to subrectangular, retuse, base truncate, margin crenate at the base to short-laciniate at the apex, spreading; bicallose, the calli thin, fleshy, somewhat rugose, with a very short, thin keel in between; disc provided with 3-5 fleshy, thin, parallel keels that run down to the apical sinus. **Column** thin, straight, long. **Clinandrium** hood reduced, margin entire. **Anther** narrowly ovoid, 4-celled. **Pollinia** 4, "bird wing" type, strongly laterally compressed, the inner pair smaller; caudicles laminar, somewhat shorter than the pollinia, apex tridentate. **Rostellum** apical, slit. **Nectary** short, barely penetrating the ovary, not inflated, smooth.

OTHER SPECIMENS: Cult. Greenhouse, *Huttleston 1977*, 17 V 1963, AMES! Mont St. Amont, Hort. *van Imschoot s.n.*, K! Without data, *Pfau 92*, W 2167! Ibid. *Veitch 71*, W 49596! **COSTA RICA:** Without locality data, Hort. SEL, 5 IV 1977, *Hágsater s.n.*, AMO! (Illustration voucher) Ibid. VII 1978, *Ramirez s.n.*, AMO! **Cartago:** Navarro, 29 I 1948, *Lankester s.n.*, AMES! **San José:** San Ignacio de Acosta, 18 III 1937, *Brade 8*, F! San Isidro de Pérez Zeledón, cult. en Jardín Botánico Lankester, 1 II 1988, *Mora de Retana s.n.*, USJ! El General, 600 m, 27 I 1897, *Pittier 31*, BR! Vicinity of El General, 915 m, I 1936, *Skutch 2348*, AMES x3! K! US! Ibid. 640 m, I 1939, *Skutch 4015*, AMES! **Puntarenas:** Finca Loma Linda, Cañas Gordas, 1140 m, 26 II 1973, *Busey 646*, MO! P. I. La Amistad, Río Cotón, 1680 m, 31 I 1995, *Gamboa 41*, F! Abrojo Corredores, 200-250 m, 27 III 1981, *Ocampo 3111*, CR! Buenos Aires, Cantón de Osa, 480 m, 12 XII 1933, *Valerio 843*, F! **PANAMÁ: Chiriquí:** Chiriquí, *Zahn 63*, W 49598! [labels mounted on the holotype.]

OTHER RECORDS: Without data, *Zahn 61*, water-color painting of flower, W 49596! Hort. 26 VI 1873, *Veitch*, water-color painting, K! **COSTA RICA: San José:** Dota, eastern slopes of Cerro Nara, 1050-1140 m, 15 I 1999, photographed 25 XII 1999, *Pupulin 1114*, color photo, in F. Pupulin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1: 301, San José, C.R., Editorial de la Universidad de Costa Rica. **Puntarenas:** San Vito de Java, *Lankester s.n.*, illustrated 2 III 1967, *R. L. Rodríguez*, xerox of illustration, AMO!

DISTRIBUTION AND ECOLOGY: Endemic to basin of the Valle del General in Costa Rica and neighboring Panama. Epiphyte, growing at 200-1680 m altitude. Flowering from December to April. cult. May-June. Van der Pijl and Dodson (1966) report pollination by hummingbirds.

RECOGNITION: *Epidendrum pseudepidendrum* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, and Turialvae Subgroup which has a racemose and few-flowered inflorescence on an elongate peduncle, producing new racemes over the years and thus pluriracemose. The species is recognized by the generally tall plants, with elliptic leaves (5-20 x 2-6 cm), lax and few-flowered, apical inflorescence, the large flowers with dark green sepals and petals, and a solid, lustrous, orange lip with the column basally green, and apex red to violaceous. *Epidendrum xanthoianthinum* Hágsater (*E. pseudepidendrum* var. *auratum* Rchb.f.) from Colombia, has the lip clearly 3-lobed, the midlobe divided into two subquadrate, divaricate lobes, the the flowers green with a lemon-yellow lip with the disc and apex of the column purple to yellowish purple.



2

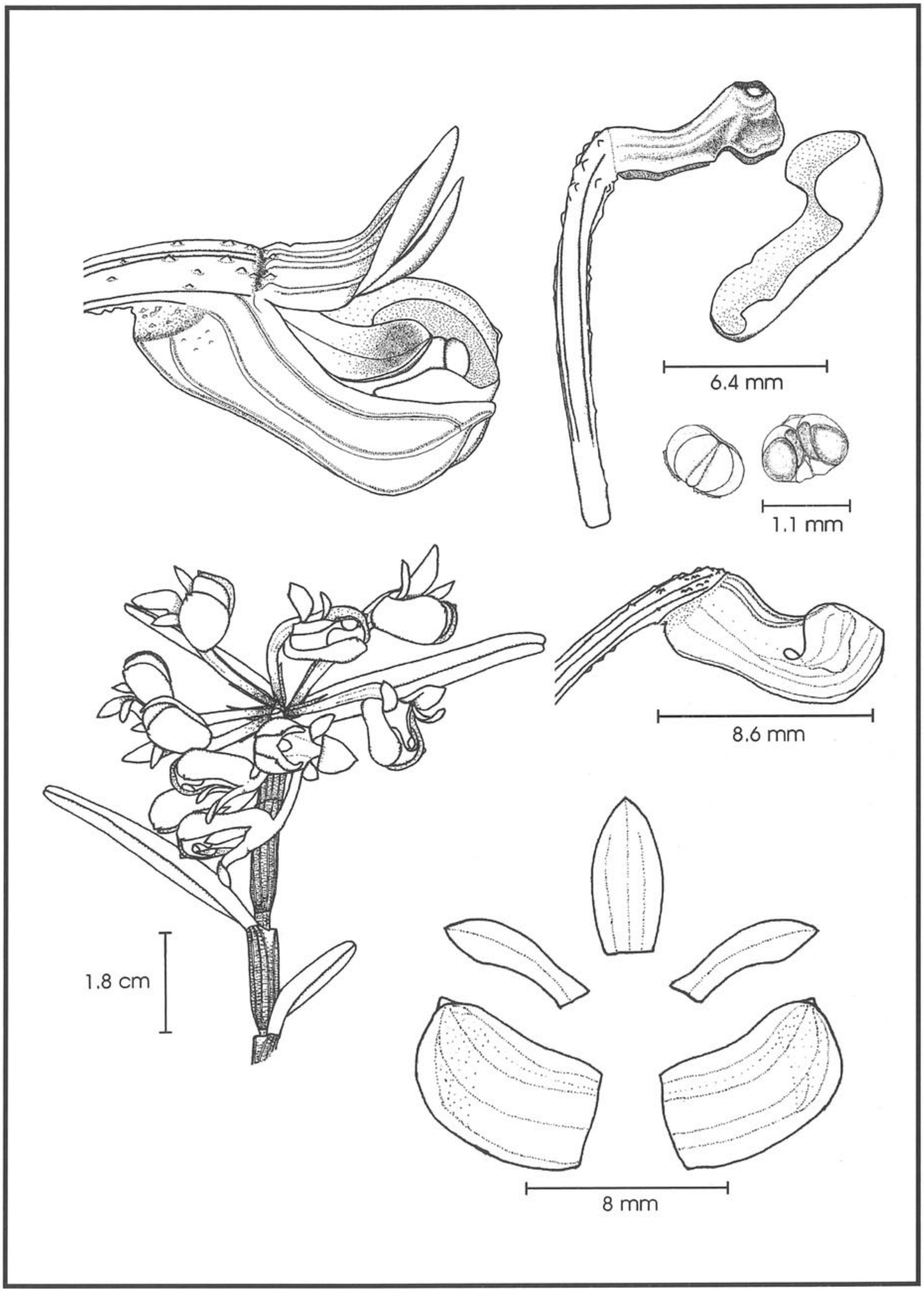
CONSERVATION STATUS: DD. Data deficient. A very desirable species in horticulture, apparently overcollected throughout its limited range of distribution.

ETYMOLOGY: From the Greek, pseudo, false, resembling, and epi, upon, and dendron, tree, false *Epidendrum*, originally proposed by Reichenbach as a separate genus, and later integrated into the genus *Epidendrum* using the name as the specific epithet.

REFERENCES: Lückel, E., 1977. *Epidendrum pseudepidendrum;* die Geschichte einer Orchideenrarität. **Die Orchidee** 28: 8-13. Van der Pijl, L. & Calaway H. Dodson, 1966. **Orchid Flowers-Their Pollination and Evolution**, Univ. Miami Press, pg. 95.

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EPIDENDRUM PSEUDOCARDIOEPICHILUM Becerra & Hágsater **Plate 1166**

EPIDENDRUM PSEUDOCARDIOEPICHILUM Becerra et Hágsater, *sp. nov.*

Type: PERU: Pasco: Prov. Oxapampa; Zona de amortiguamiento del Parque Nacional Yanachaga-Chemillen, Bosque primario, 3000 m, 2 febrero 2005, ***Edwin Becerra, C. Arias & J. Mateo 814***. Holotype: HOXA! (Illustration voucher). Isotypes: MO. USM.

Epidendro cardioepichilo Hágsater, D.Trujillo & E.Santiago simile sed hipochilo minus sacciformi et epichilo insigniter majore reniformi cum carinis binis in parte angusta, columna duis alis quadratis ferenti, distinctum.

Hierba epífita, monopodial, ca. 23-30 cm de alto. **Raíces** de la base del tallo principal, carnosas, delgadas. **Tallos** tipo caña, erguidos, prolíficos, nacen perpendicular o subperpendicularmente al tallo anterior, 11-23 cm de alto; internudos 0.9-4 x 0.3-0.4 cm; cubiertos total o casi totalmente por vainas estriadas, infladas en seco. **Hojas** 3-4, distribuidas en la porción apical de los tallos, alternas, caducas, subcoriáceas; vainas foliares, tubulares, papiráceas cuando envejecen; láminas oblongas a oblongo lanceoladas, atenuadas y bilobadas en el ápice, margen extendido, entero, 1.6-4.8 x 0.3-0.6 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, a manera de pseudoumbela, subesférica, pauciflora, laxa, 2.2 x 3.4 cm; pedúnculo 7-9 x 1 mm, provisto de una bráctea similar o de mayor tamaño a las brácteas florales. **Brácteas florales** pequeñas, de menos de la mitad del largo del ovario, triangular lanceoladas a lanceoladas, agudas, papiráceas, abrazadoras, 4-8 x 1 mm. **Flores** 10-12, simultáneas, resupinadas, verdosas, cuando envejecen con finas aspersiones magenta más concentradas en el ápice de los segmentos del florales; sin datos de fragancia. **Ovario** terete, delgado, ligeramente falcado, no inflado, pustulado en la parte distal, 6-11 mm de largo. **Sépalos** apiculados, escasamente pustulados en la base de la superficie dorsal, las nervaduras dorsalmente prominentes, margen entero, extendido; el **dorsal** libre, entreabierto, la mitad apical ligeramente reflexa en posición natural, (siendo cóncava la superficie dorsal), oblongo lanceolado, 3-nervado, obtuso, 6.5 x 2.8 mm; los **laterales** parcialmente unidos, entrecerrados, casi paralelos a la columna, oblongo-elípticos, redondeados en el ápice, oblicuos, ligeramente arqueados hacia arriba, 4-nervados, ligeramente cóncavos, en posición natural abrazando al labelo, 8 x 4.6 mm. **Pétalos** libres, entreabiertos, falcados, dorsalmente algo arqueados, de inserción oblicua, espatulados, 1-nervados, subagudos, margen extendido, entero, excepto la mitad apical dorsal que es diminutamente papilosa, 6 x 2 mm. **Labelo** parcialmente unido a la columna, entero, la base de la columna, sacciforme en la porción que va unida a la columna, más amplio en la base; la porción libre angosta y después anchamente reniforme al extenderse, abrazando a la tercera parte distal de la columna en posición natural y dejando expuesta a la antera, márgenes extendidos, enteros, excepto en la parte distal que diminutamente dentado, 8.6 x 8.2 mm (cuando extendido); con dos quillas en la parte libre y angosta del labelo, truncadas, de margen entero. **Columna** la mitad basal unida al labelo, semiterete, fuertemente arqueada hacia arriba, de manera que la parte dorsal es cóncava, el ápice ventralmente con un par de alas prominentes, subcuadradas, 6.4 x 2-2.2 mm. **Clinandrio** reducido, margen entero. **Antera** reniforme, 4-locular, 1.1 x 0.9 mm. **Polinios** 4, dos pares desiguales, triangular-obovoideos. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** no vista.

Epiphytic, monopodial. **Roots** from the base of the main stem, fleshy, thin. **Stems** cane-like, erect, prolific, perpendicular or subperpendicular to the previous stem; internodes completely or nearly totally covered by the striated, sheaths, inflated when dry; sheaths tubular, papiraceous when old, striated. **Leaves** 3-4, distributed along the upper half of the stem, alternate, deciduous (when old), subcoriaceous; foliar sheaths tubular, striated, becoming papery when old; blade oblong to oblong-lanceolate, apex minutely bilobed, margin spreading entire. **Inflorescence** apical, racemose, a pseudoumbel, subspherical, lax, few-flowered; peduncle short, protected by a bract similar to the floral bracts or larger. **Floral bracts** triangular-lanceolate to lanceolate, papery, shorter than half the ovary, amplexicaul. **Flowers** 10-12, simultaneous, resupinate, greenish, when old tinged with magenta, the tinge concentrating towards the apex of the perianth parts. **Ovary** long, thin, slightly falcate, not inflated, scarcely pustulate distally. **Sepals** apiculate, slightly pustulate dorsally towards the base, veins dorsally prominent, margin entire, spreading; dorsal sepal oblong-lanceolate, 3-veined, the distal 2/3 reflexed in natural position, therefore dorsally concave; the lateral sepals partly connate, slightly spreading, nearly parallel to the column, asymmetrically oblong-elliptic, arching upwards, 4-veined, slightly concave and partially enveloping the lip. **Petals** free, partly spreading, falcate, dorsally somewhat arching, obliquely inserted, spatulate, 1-veined, subacute, margin spreading, entire, except for the dorsal apical half which is minutely papillose. **Lip** forming a pouch united to the column, wider at the base, the free portion narrow and the spreading and reniform, the sides erect and embracing the distal 1/3 of the column, leaving the anther free, margins spreading, entire, except for the distal part which is minutely dentate, with two longitudinal, flattened keels on the free, narrow portion of the lip, truncate, the margin entire. **Column** the basal half united to the lip, semiterete, arching upwards, thus dorsally concave, the free portion 2-winged, wings subquadrate. **Clinandrium-hood** reduced, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, two unequal pairs, triangular-obovoid. **Rostellum** subapical, slit.

OTHER RECORDS: PERU: Pasco: Prov. Oxapampa: Distrito Huancabamba; Parque Nacional Yanahcaga-Chemillen, nosque montanto, 2910 m, 16 II 2004. *Vásquez 29456*, HOXA! MO, USM.

DISTRIBUTION AND ECOLOGY: Known presently as endemic to the Parque Nacional Yanachaga-Chemillen, in the central jungle of Peru. Growing in very wet forests with abundance of bryophytes, and thus restricted to areas above 2900-3000 m altitude, with presence of humid winds arising from the Amazon basin.

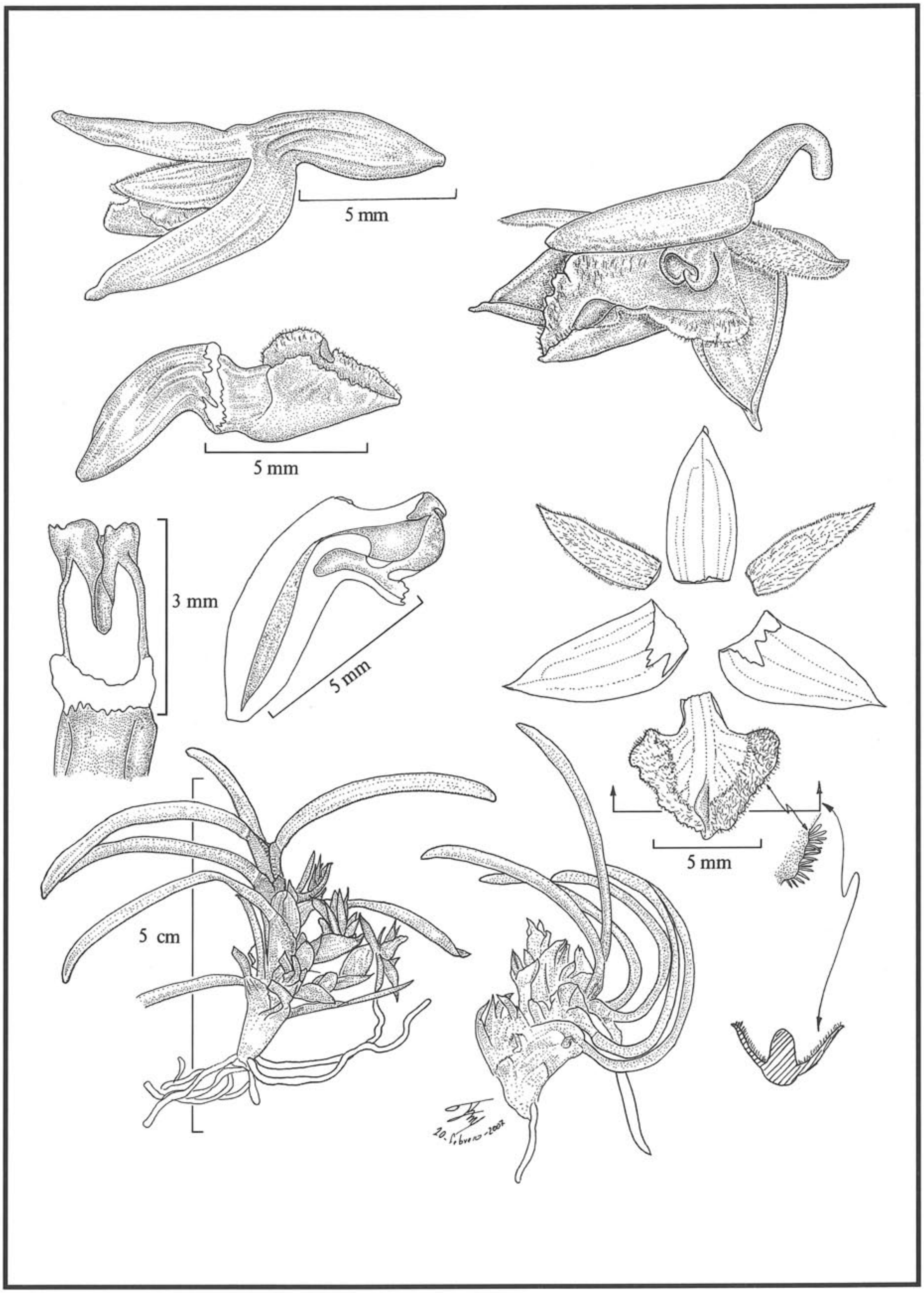
RECOGNITION: *Epidendrum pseudocardioepichilum* belongs to the Diothonea Group and Subgroup which is characterized by the branching habit, linear-lanceolate to lanceolate, bilobed leaves, arching-nutant, racemose inflorescence, membranaceous or rarely fleshy flowers, the lip entire to 3-lobed, with an erose margin, ecallose, without or with 1-10 thin, smooth to erose keels, the column united to the lip from totally to obliquely to free. The species is recognized by the short inflorescence green flowers, becoming tinged with magenta towards the apex of the floral segments, the base of the lip forming a pouch with the column, the free portion of the lip narrow and abruptly expanded and reniform, embracing the apex of the column which has a pair of quadrate wings at the apex. It is similar to *Epidendrum cardioepichilum* has yellowish-brown flowers with the apex of the lip pink, the floral segments nearly parallel to the column, the apices revolute, the base of the lip forming a large cavity with the column, and the apex widely cordate and embracing the apex of the wingless column. *Epidendrum globiflorum* F.C. Lehm. & Kraenzl., has oblong-ovate leaves, a very short inflorescence (ca. 1 cm long), greenish-white flowers, the lip united to the column throughout, clearly 3-lobed and with the margin spreading. *Epidendrum pseudoglobiflorum* Hágsater & Dodson has a dense inflorescence, the flowers trumpet-shaped (the sepals connate), orange to vermillion-red colored, and the lip suborbicular-hexagonal, totally united to the column. *Epidendrum trachysepalum* Hágsater also has a saccate lip, but the column is free, and the sepals a dorsally uncinate.



5

CONSERVATION STATUS: DD. Known range reduced, only known from a restricted, scarce habitat in the Yanachaga-Chemillen Nacional Park.

ETYMOLOGY: From the Greek ψευδο-, false, καρδια, heart, επι- upon, or the apical portion, and χειλοσ, lip, in reference to the similarity of this species to *E. cardioepichilum*.



EPIDENDRUM PSILOSEPALUM Hágsater & E.Santiago **Plate 1167**

EPIDENDRUM PSILOSEPALUM Hágsater et E.Santiago, *sp. nov.*

Type: COLOMBIA: Cauca: Caldera Chinao, Tierradentro, 2000 m, 27 II 1883, ***F. C. Lehmann 2721***. Holotype: G! (Illustration voucher.)

Epidendro sophronitoidi F.Lehm & Kraenzl. simile sed floribus minoribus, petalorum labellique superficie ventrali valde pubescenti, floribus luteo-viridulo-rubellis, distinguibile.

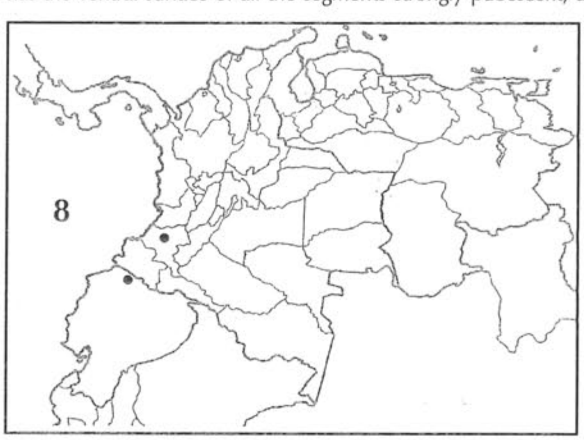
Hierba epífita, caespitosa, monopodial, hasta 4 cm de largo. **Raíces** basales, carnosas, delgadas, ca. 1 mm grosor. **Tallos** sencillos, erectos, lateralmente aplanados, completamente cubiertos por las vainas foliares, ocasionalmente se produce un tallo adicional de cerca de la base pero arriba de las inflorescencias, 2.5-4 cm de largo. **Hojas** 6-8, distribuidas a lo largo del tallo, dísticas, imbricadas en la base, articuladas; vainas tubulares, finamente estriadas, parcialmente imbricadas, 5-16 mm de largo; lámina linear, obtusa, diminutamente apiculada, rugosa, conduplicada y arqueada en posición natural, coriácea, verde oscuro, margen entero, papiloso; 2.1-4.5 x 0.4-0.6 cm. **Bráctea espatácea** ausente. **Inflorescencia** lateral, producida de cerca de la base del tallo, rastrera, colgante, florece durante varios años, 1.5 cm de largo; completamente cubierta por brácteas, de segmentos sucesivos, ramificados; cada segmento de varios entrenudos, en cada nudo con una bráctea ovada, en ocasiones tubular en la base, aguda a cortamente acuminada, estriada, escariosa, 6-8 mm de largo; el nuevo segmento se produce de la parte superior del último entrenudo. **Brácteas florales** semejantes a las del escapo, más largas que el ovario, tubulares, acuminadas, 7 mm de largo. **Flores** solitarias, se produce una sola en cada segmento, no resupinadas, de color amarillo verdoso rojizo; sin datos de fragancia. **Ovario** terete, ligeramente inflado, no ornamentado, 5 mm de largo. **Sépalos** entreabiertos, libres, carnosos, glabros, ovados, agudos, diminutamente apiculados, márgenes enteros, extendidos; 7-8 x 3-3.5 mm; el **dorsal** 5-nervado; los **laterales** oblicuos, 4-nervados. **Pétalos** extendidos, libres, angostamente lanceolados, ápice cortamente acuminado, 3-nervados, superficie ventral densamente pubescente, márgenes extendidos, ciliados; 6.8 x 1.8 mm. **Labelo** unido a la columna, carnoso, anchamente triangular, base truncada, los lados erectos abrazando el ápice de la columna sin envolverla por completo, ecalloso, con una carina baja y roma en la mitad apical de la lámina, periferia de la superficie ventral densamente pubescente, margen extendido, ciliado; 5.5 x 7 mm. **Columna** corta, gruesa, arqueada hacia arriba, 3 mm de largo. **Clinandrio** corto, margen entero. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando la mitad de la cavidad estigmática. **Nectario** poco profundo, apenas penetrando ligeramente el ovario, liso, no inflado. **Antera** no vista. **Polinios** no vistos. **Cápsula** elipsoide; pedicelo y cuello apical obsoletos; cuerpo 14-15 x 9-10 mm.

Epiphytic, monopodial **herb. Roots** basal, fleshy, thin. **Stem** simple, erect, laterally compressed, completely covered by foliar sheaths, occasionally producing an additional stem near the base, but above the inflorescences. **Leaves** 6-8, distributed throughout the stem, distichous, imbricating a the base, articulate; sheaths tubular, minutely striated, partly imbricating; blade linear, obtuse, minutely apiculate, rugose, conduplicate and arching in natural position, coriaceous, dark green, margin entire, papillose. **Inflorescence** lateral, produced near the base of the stem, creeping, pendent, flowering during several years; completely covered by bracts, made of successive segments, branching; each segment of various internodes, each node with an ovate bract occasionally tubular at the base, acute to acuminate, striated, scarious; the new segment produced from the upper part of the last internode. **Floral bracts** similar to those of the peduncle, longer than the ovary, tubular, acuminate. **Flowers** solitary, produced singly from each segment, non-resupinate, reddish yellow-green. **Ovary** terete, slightly inflated, unornamented. **Sepals** partly spreading, free, fleshy, glabrous, ovate, acute, minutely apiculate, margins entire, spreading; the dorsal sepal 5-veined, the lateral sepals oblique, 4-veined. **Petals** spreading, free, narrowly lanceolate, apex short acuminate, 3-veined, the ventral surface densely pubescent, margins spreading, ciliate. **Lip** united to the column, fleshy, widely triangular, base truncate, the sides erect, embracing the apex of the column without covering it, ecallose, with a low, rounded keel along the apical half of the lip, the surface of the lip near the margin densely pubescent, margin spreading, ciliate. **Column** short, thick, arching upwards. **Clinandrium-hood** short, margin entire. **Rostellum** subapical, slit. **Nectary** shallow, barely penetrating the ovary, smooth, not inflated. **Capsule** ellipsoid, pedicel and apical neck obsolete.

OTHER SPECIMENS: ECUADOR: Carchí: Valle de Maldonado, km 60 on road Tulcán-Maldonado, 2700 m, 18 V 1973, *Holm-Nielsen 5710*, AAU!

DISTRIBUTION AND ECOLOGY: Known only from the western Andes in southern Colombia, and the border between Ecuador and Colombia, epiphyte, at 2000-2700 m altitude. Flowering February to May.

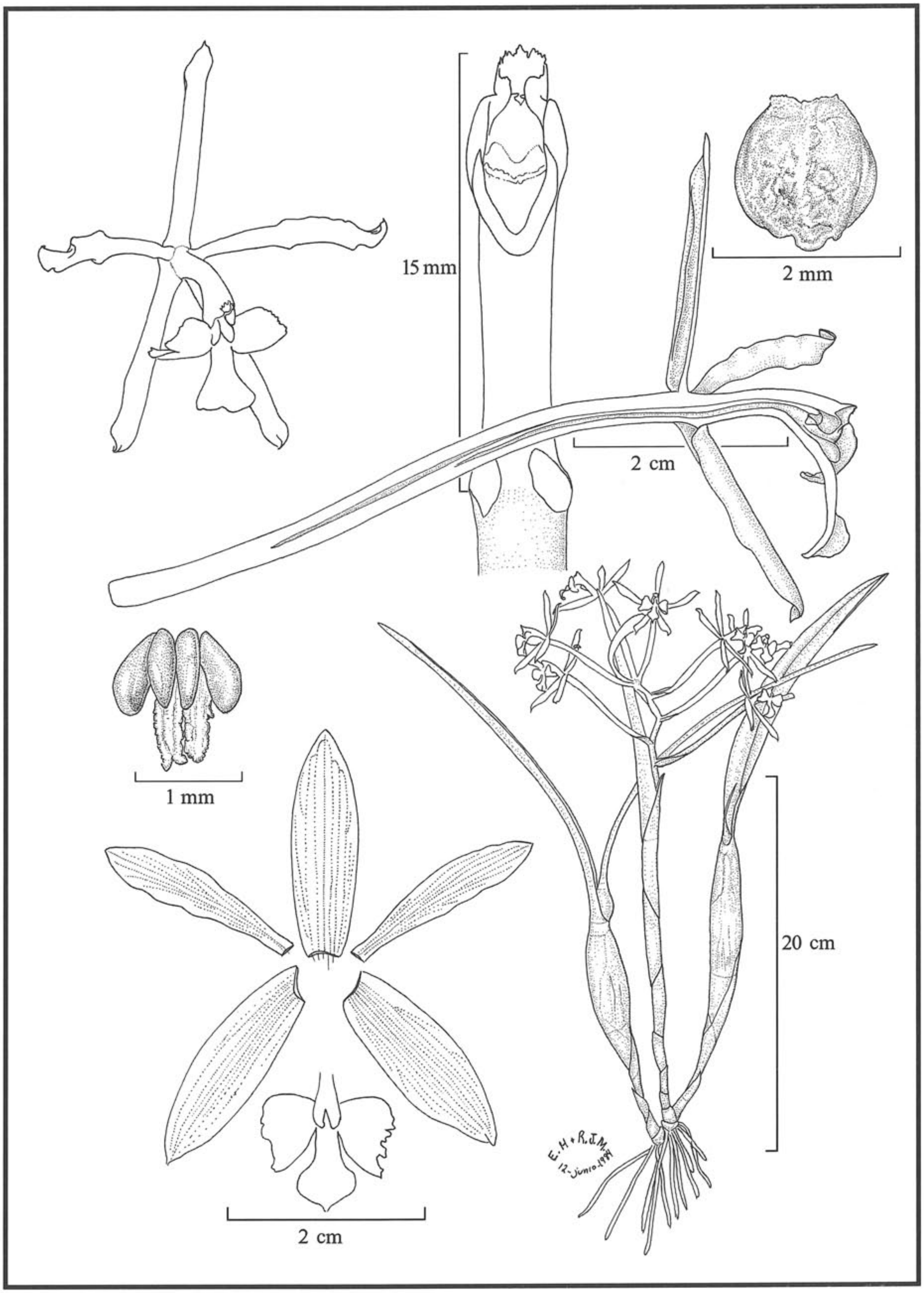
RECOGNITION: *Epidendrum psilosepalum* belongs to the *Takulumena* group which is recognized by the small, *Vanda*-like plants, with simple, imbricating, distichous leaves, and a lateral complicated inflorescence, producing new, single-flowered segments over several years. The species is recognized by the intermediate size of the reddish yellow-green flower, sepals 7-8 mm long, with the sepals glabrous, and the ventral surface of the petals and lip strongly pubescent. It has been confused with *E. sophronitoides* F.Lehm. & Kraenzl. which has larger flowers, the floral segments glabrous and acuminate, 10-16 mm long. *Epidendrum dasyanthum* Hágsater has the ventral surface of all the segments strongly pubescent, and is widespread down to northern Peru, along the eastern ridge of the Andes. *Epidendrum rhodovandoides* Hágsater has small, cardinal red to reddish magenta flowers, the floral segments generally glabrous, sepals 4-5 mm long, and is known only from northern Colombia (Antioquia) and western Venezuela (Táchira).



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek ψιλος, bare, stripped of hair, and σεπαλυμsepals, in reference to the glabrous sepals, as opposed to the hairy petals and lip.

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EPIDENDRUM PURPURASCENS Focke

Plate 1168

EPIDENDRUM PURPURASCENS Focke, Tijdschr. Wis-Natuurk. Wetensch. Eerste Kl. Kon. Ned. Ins. Wetensch. 4: 64. 1851.

Type: SURINAM: Habitat at truncos arborum in sylvis ad flumina Suriname et Commewyne superiora..., ***H. C. Focke 231.*** Lectotype (here designated): L! Photo: NY! Isolectotype: a single flower W 52136 [pro parte]!
Epidendrum glumibracteum Rchb.f., Hamburger Garten-Blumenzeitung 19: 11. 1863. Type: COSTA RICA: [Without locality], ***Warscewicz s.n.***, Lectotype (designed by Mora & Atwood, 1993): W (not seen). *Epidendrum glumibracteatum* Rchb.f., Bot. Mus. Leafl. 3(5): 75. 1935. (misspelled from *Epidendrum glumibracteum* Rchb.f.)
Epidendrum clavatum Lindl., Bot. Reg. 22: t. 1870. 1836. Type: [VENEZUELA: Sucre:] "Cumaná", found in August 1834, *J.Henchman ex* Hort. Lowe and Clampton. Holotype: K-L!, plant on the upper right-hand corner. [*non Epidendrum clavatum* Koenig, 1791 = *Saccolabium clavatum* (Koenig) Lindl.] *Didothion clavatum* Raf., Fl. tellur. 4: 39. 1838. *Epidendrum clavatum* Lindl. var. *purpurascens* (Focke) Cogn., Martius Fl. Bras. 3(5): 73. 1898. *Auliza clavatum* (Lindl.) Brieger, *nom. illeg.*, Orchideen (Schlechter), 3 ed., 1(9): 547. 1977. *Coilostylis clavatum* (Raf.) Whitner & Harding, Cattleyas and Relatives 6: 141. 2004.
Epidendrum psilanthemum Loefgr., Arch. Jard. Bot. Rio de Janeiro 2: 57. tab XXIV. 1918. Type: BRAZIL: in regio Amazonicam, ***J. Geraldo Kuhlmann s.n.*** Lectotype (here designated): the illustration, Arch. Jard. Bot. Rio de Janeiro 2: tab XXIV. 1918.
Epidendrum pulchrum Barb. Rodr., *nom. herb.* BRAZIL: Amapá: Rio Yary, Sto. Antonio da Cachoeira, ***E. Inethlage s.n.***, MG 12442! [*non Epidendrum pulchrum* (Schltr.) Hágsater & Dodson, 1992]

Hierba epífita, simpodial, subcespitosa, 14-35 cm de alto. **Raíces** basales, carnosas, 0.5-0.9 mm de grosor. **Tallos** engrosados formando un seudobulbo fusiforme, heteroplástico, recto, 5-17 x 0.4-1.5 cm; cubiertos por 3-5 vainas papiráceas, blanco grisáceas. **Hojas** 1-2, agregadas en el ápice del seudobulbo, coriáceas, articuladas; lámina angostamente elíptica lanceolada, ápice agudo, 10-30 x 0.9-3.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida del tallo inmaduro, racemosa, dística, 7-18 cm de largo; pedúnculo lateralmente comprimido, 1.5-5 cm de largo; con 1 bráctea oculta por las hojas, oblongo triangular, aguda; raquis terete, delgado, recto a ligeramente sinuoso. **Brácteas florales** más cortas a casi de la misma longitud que el ovario, las apicales más pequeñas, oblongo triangulares, acuminadas, 0.8-3.0 cm de largo. **Ovario** terete, no inflado, no ornamentado, 25-55 x 0.3-0.7 mm. **Flores** 4-12, simultáneas, resupinadas, los sépalos y pétalos verdes, difuminados de púrpura, labelo y mitad apical de la columna blancos, mitad basal de la columna verde, callo amarillo; fragancia dulce, por la mañana. **Sépalos** extendidos, angostamente elípticos, acuminados, 5-nervados con nervaduras secundarias dando la apariencia de ser 7-9 nervados, margen entero a ondulado, revoluto, 15-25 x 3.0-4.0 mm; los **laterales** ligeramente oblicuos, 4.0-5.0 mm de ancho. **Pétalos** extendidos, linear elípticos, agudos, 3-nervados con 2 nervaduras secundarias, pareciendo ser 5-nervados, margen entero a ondulado, 13-22 x 1.5-2.0 mm. **Labelo** unido a la columna, trilobado, base truncada a ligeramente cordada, 13-15 x 11-14 mm; bicalloso, los callos laminares, prominentes; lóbulos laterales triangulares a dolabriformes, el ángulo delantero agudo, margen distal irregularmente eroso, 4.5-8.0 x 3.0-5.0 mm; lóbulo medio espatulado, unguiculado, apiculado, angosto, ensanchado cerca del ápice, 7.0-9.0 x 3.0-4.0 mm. **Columna** ligeramente arqueada a arqueada, delgada, 11-14 mm de largo. **Clinandrio** prominente, margen eroso dentado. **Antera** ovoidea, 4-locular. **Polinios** 4, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando 1/2 de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, delgado, liso. **Cápsula** elipsoide, pedicelo 7-10 mm de largo, cuerpo ocupando alrededor de la mitad de el largo, 16-25 x 10-16 mm, cuello 8-11 x 1.0-1.5 mm.

Epiphytic, sympodial, subcaespitose **herb. Roots** basal, fleshy, thin. **Stems** thickened into a fusiform pseudobulb, heteroblastic, straight; covered by 3-5 papery, grayish white sheaths. **Leaves** 1-2, aggregate at the apex of the pseudobulb, coriaceous, articulate, blade narrowly elliptic-lanceolate, apex acute. **Inflorescence** apical, produced from the immature stem, racemose, distichous; peduncle laterally compressed, with a single bract hidden within the leaves, oblong-triangular, acute; rachis terete, thin, straight to somewhat sinuous. **Floral bracts** shorter to nearly as long as the ovary, getting smaller towards the apex, oblong-triangular, acuminate. **Ovary** terete, not inflated, smooth. **Flowers** 4-12, simultaneous, resupinate, sepals and petals green, tinged purple, lip and apical half of the column white, basal half of the column green, callus yellow; morning fragrance sweet. **Sepals** spreading, narrowly elliptic, acuminate, 5-veined, with secondary veins so as to appear 7-9-veined, margin entire to undulate, revolute; the lateral sepals slightly oblique. **Petals** spreading, linear-elliptic, acute, 3-veined with 2 secondary veins, so as to appear 5-veined. **Lip** united to the column, 3-lobed, base truncate to slightly cordate; bicallose, the calli laminar, prominent; lateral lobes triangular to dolabriform, the forward angle acute; apical distal margin unevenly erose; midlobe spatulate, unguiculate, apiculate, narrow, widened near the apex. **Column** slightly arching to arching, thin. **Clinandrium-hood** prominent, margin erose-dentate. **Anther** ovoide, 4-celled. **Pollinia** 4. laterally compressed; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, thin, smooth. **Capsule** ellipsoid, pedicel thin, long, body occupying about half the length, apical neck long.

OTHER SPECIMENS AND RECORDS: See appendix.



DISTRIBUTION AND ECOLOGY: Known from western Costa Rica (500-1600 m), and widespread in northern South America from Colombia, Venezuela, Guyana, Surinam, French Guyana and northern Brazil (Amapá, Pará, Maranhao), and the upper Rio Negro basin in Colombia and Venezuela (from sea level to 750 m altitude). Flowering throughout the year, mainly April-August.

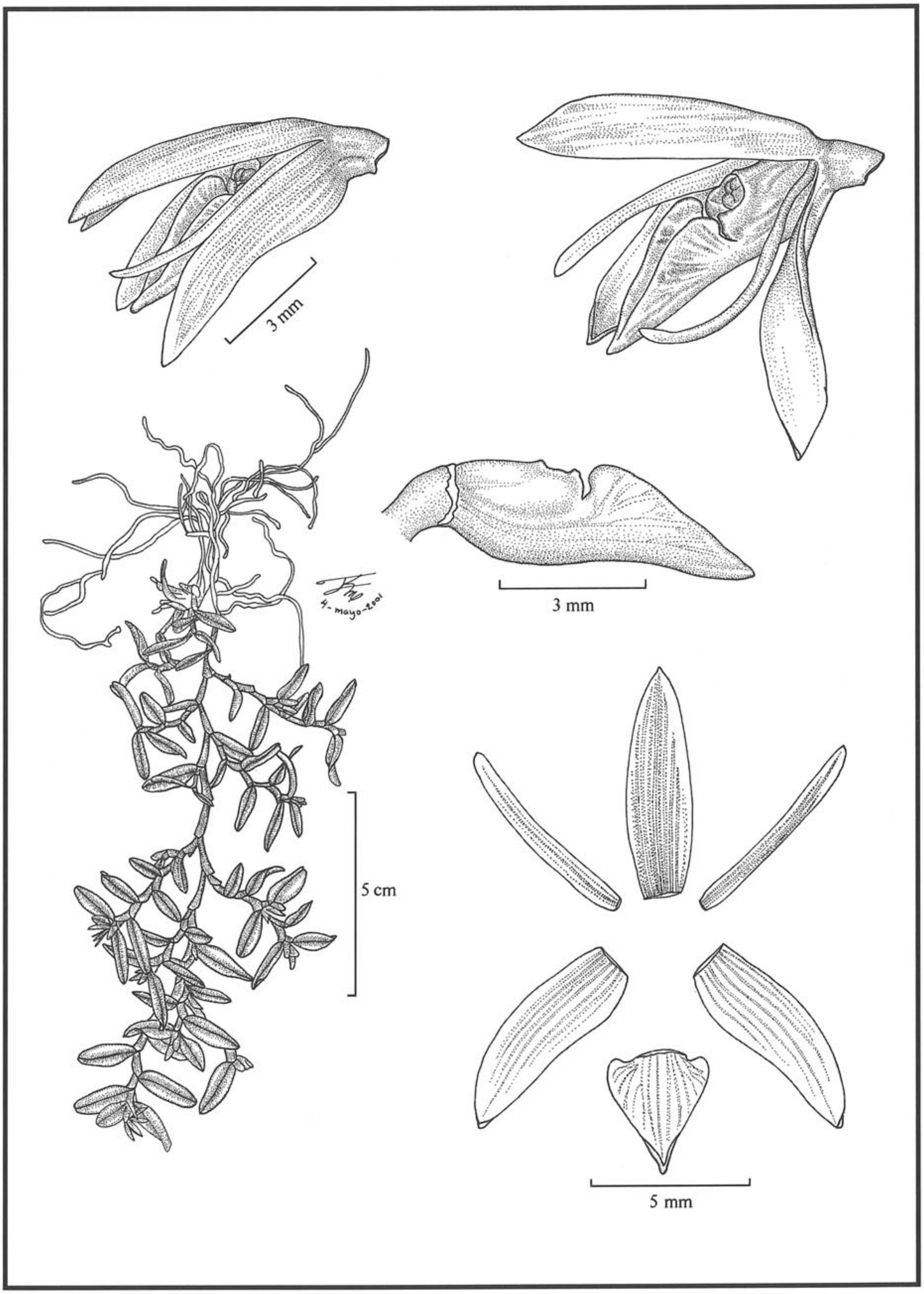
RECOGNITION: *Epidendrum purpurascens* belongs to the Coilostylis Group which is characterized by the sympodial, caespitose plants, the stems forming a fusiform, heteroblastic pseudobulb, with an apical, racemose, distichous inflorescence, the peduncle covered by large bracts, and flowers large, star-shaped, with long, narrow sepals and petals. The species is recognized by the inflorescence produced from the immature, bifoliate stem, sepals 15-25 mm long, the deeply 3-lobed lip, the lateral lobes dolabriform with the margin unevenly erose and the midlobe spatulate, unguiculate, apiculate, widest near the apex. *Epidendrum oerstedii* Rchb.f. also flowers from the immature growth and has 1-2 apical leaves, but the flowers are larger, sepals 40-65 mm long, the lateral lobes obovate, and the midlobe widened at the middle. *Epidendrum ciliare* L. has distal margin of the lateral lobes of the lip is deeply fimbriate. *Epidendrum volutum* Lindl. is vegetatively similar, but has 2-3 leaves, an obscurely 3-lobed, suborbicular-cordiform, recurved lip, and the flowers are concolor, pale green. *Epidendrum viviparum* Lindl. has 2-3 leaves, a very long inflorescence (20-70 cm long), produces new plants from the apical nodes of the inflorescence which is produced from the mature pseudobulb, sepals are 3-4.5 cm long, the lateral lobes of the lip are reniform, the distal margin undulate, and acuminate midlobe.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin, *purpurascens*, shimmering purple, in reference to the purple tinge of the sepals and petals.

REFERENCES: Mora, D.E. & J.T. Atwood, 1993. *Epidendrum glumibracteum* Reichb.f. *in* Atwood, J.T. **Icones Plantarum Tropicarum** 16: pl. 1524.

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EPIDENDRUM REPENS Cogn.

Plate 1169

EPIDENDRUM REPENS Cogn., Repert. Spec. Nov. Regni Veg. 7: 122. 1909.

Lectotype (here designated): JAMAICA: hab. In Jamaica inter muscos in arboribus repens, 1888, ***H. Eggers 3679.*** BR!

Synonyms: *Epidendrum bourgeaui* Schltr., Beih. Bot. Centralbl. 36: 401. 1918, (as"borgeavii") Type: México: Veracruz, région d´Orizaba, San Cristóbal, 30 September 1865, *E. Borgeau 3104.* Holotype: B (destroyed). Isotypes: BR! GH 73574! LE! P x2! US 27335! *Epidendrum solisequum* Kraenzl., Ark. Bot. 16: 17, 1920. Type: México: Veracruz, région d´Orizaba, September 1865, *E. Bourgeau 3104.* Holotype: GH 73574! Isotypes: AMES! B (destroyed), BR! L! LE! P x2! S! US 27335! *Epidendrum protractum* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 145. 1920. Type: Colombia: Cauca, c. 1500 m, *M. Madero s.n.* Holotype: B (destroyed). *Epidendrum ramistratum* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 8: 82-83. 1921. Type: Ecuador: Pichincha: In silvis subandinis montis Corazon, July 1894, *A. Sodiro 45,* Lectotype:(here designated by E. Hágsater & C. Dodson): QPLS! Isolectotype BR! Copy of floral sketch AMES 36126!

Hierba epífita, colgante, ramificada, de 15-75 cm de largo. **Raíces** en la base de los tallos principal y secundarios, delgadas y largas, hasta 0.5 mm de grosor. **Tallos** flexuosos, teretes, colgantes, muy ramificados; el tallo principal, muy largo, de 15-75 cm de largo, los secundarios también largos, se producen de los nodos inferiores del tallo principal, tallos terciarios o florales cortos, producidos de la axila de cada hoja del tallo principal y de los secundarios, cortos, de 1.2-6 cm de largo, de la base de la vaina de la hoja apical del tallo floral se produce a su vez un nuevo tallo terciario o floral. **Hojas** numerosas en los tallos primarios y secundarios, 4-8 en los tallos terciarios o florales, las de los tallos principales o secundarios más largas que las de los tallos florales, las del tallo principal y del secundario 16-25 x 4-5 mm, las de las ramas terciarias o florales 10-22 x 2-5 mm; lámina oblongo ovada, ovada a lanceolada, desigualmente bilobada, rígida, coriácea. **Inflorescencia** solitaria, en el ápice de la ramas secundarias y terciarias. **Brácteas florales** 2-3, del tamaño del ovario, envolventes, ampliamente triangulares, obtusas, mucronadas, con una quilla hacia el ápice, 4-7 x 4 mm. **Flores** verdosas, resupinadas. **Ovario** terete, no inflado, 5 mm de largo. **Sépalos** lanceolados, agudos, el **dorsal** 5-nervado, 6-7.2 x 1.5-1.7 mm; los laterales ligeramente oblicuos, 7-nervados, 5.8-6.8 x 2 mm. **Pétalos** linear-lanceolados, redondeados, 5-6 x 0.7 mm. **Labelo** unido a la columna, entero, triangular, carnoso, 3-3.3 x 3-4 mm; ecalloso. **Columna** ligeramente arqueada, engrosada hacia el ápice, 2-3 x 1.5 mm. **Clinandrio** corto, entero. **Antera** obovada, con una quilla al frente en el ápice, 4-locular. **Polinios** 4, obovoides, aplanados lateralmente, unidos por caudículas granulosas ca. de la mitad del largo de éstos. **Rostelo** hendido, rajado. **Lóbulos laterales del estigma** prominentes, ocupando 3/4 partes de la cavidad estigmática. **Nectario** penetrando 1/4 del ovario. **Cápsula** subglobosa, sésil, sin cuello apical, 6-8 x 4.5-5.4 mm.

Epiphytic, pendent, branched **herb**. **Stems** flexuous, terete, main stem 15-75 x ca. 0.1 cm, the secondary stem 1.2-6 cm long. **Leaves** ovate-lanceolate, unequally bilobed, coriaceous. **Inflorescence** apical, from the branches. **Floral bracts** 2-3, similar to ovary, triangular, obtuse, mucronate. **Flower** 1, resupinate, green. **Ovary** terete, unornamented. **Sepals** lanceolate, acute; the **dorsal** 5-veined; the **laterals** 7-veined. **Petals** linear-lanceolate, oblique. **Lip** united to the column, entire, triangular, thick; ecallose. **Column** somewhat arcuate. **Clinandrium-hood** reduced, entire. **Anther** obovate, 4-locular. **Pollinia** 4, obovoid, lateral compressed; caudicles soft and granulose, smaller than the pollinia. **Rostellum** slit. **Lateral lobes of stigma** penetrating 3/4 of the stigmatic cavity. **Nectary** penetrating 1/4 of the ovary. **Capsule** subglobose, sessile.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Known from Mexico, Central America, Greater Antilles, Colombia, Ecuador, Venezuela and Guyana. Epiphyte, from 600 to 1800 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum repens* Cogn. belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the and the Repens Subgroup, which has strictly pendent plants, with small leaves less than 2.5 cm long. The species has an evident main stem, with short branches, the leaves of the main and secondary stems are larger than those of the tertiary or flowering stems, ovate-oblanceolate, single flower, uninflated ovary, lip 2 mm wide, ecallose. Very similar to *Epidendrum brachyrepens* Hágsater, but the vegetative habit of that species is without an evident main stem, it is formed by a succession of similar, short stems, the leaves are all small, similar. *Epidendrum strobiliferum* Rchb. f. has smaller plants, 3-4 flowers, inflated ovary and smaller floral segments, 3-4 mm long. *Epidendrum luckei* Bock has yellowish green flowers, the ovary with an inflated vesicle behind the perianth, the column has a pair of lateral, acute teeth, and the anther ends in a pair of horn-like processes.



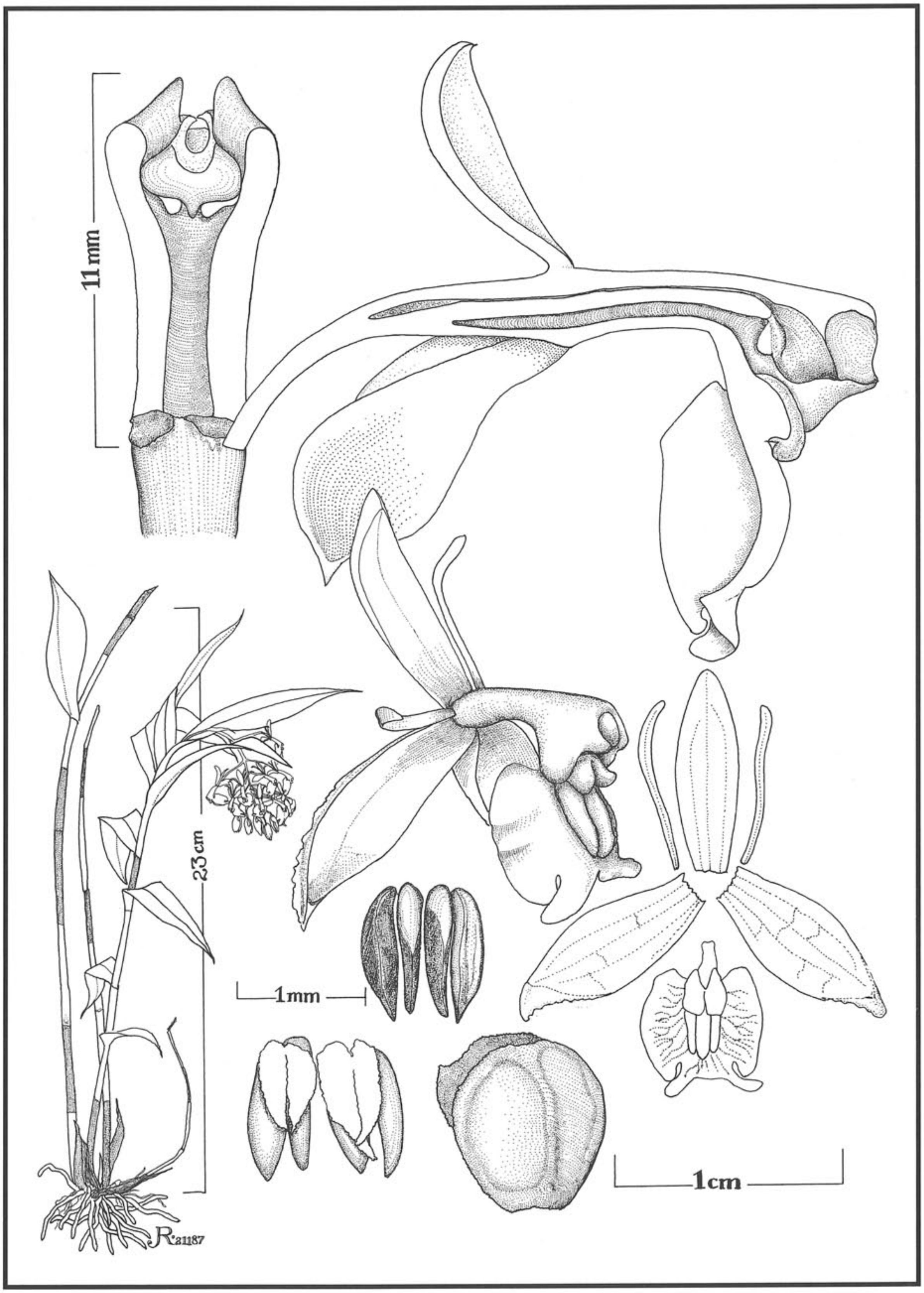
CONSERVATION STATUS: This is a very common species. Widespread in Mesoamerica, the Greater Antilles and Andean South America.

NOTES: The only specimen annotated by Cogniaux is that of *Eggers 3679* in BR. Cogniaux did not designate a type, but cited the following specimens: «Hab. in Jamaica inter muscos in arboribus repens: *Eggers no. 3679, W. Harris* in Herb. Bot. Dep. no. 7561, 10086; Haiti: *Picarda no. 289.*» Nir (2000) indicated the type as *Harris 10086*, BM!; AMES! K!, but the *Harris* specimens were not annotated by Cogniaux.

ETYMOLOGY: From the Latin, *repere*, to creep, thus creeping, prostrate.

REFERENCES: Dunsterville, G. C. K., & L. A. Garay, 1966. **Flora de Venezuela**. 4: 96; Fawcett, W., & A. B. Rendle, 1963. **Orchids of Jamaica** 1: 46-47; Hamer, F., 1974. **Orquídeas de El Salvador** 1: 250. Hamer, F., 1982. **Icones Plantarum Tropicarum** 8: pl. 733.

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EPIDENDRUM RESECTUM Rchb.f. **Plate 1170**

EPIDENDRUM RESECTUM Rchb.f., Linnaea 41: 82-83. 1876.

Type: PANAMA: America centrali, Chiriquí, ***Zahn s.n. ex Veitch 189.*** Holotype: W 49524! (in part, specimen and illustration mounted on the left-hand, the illustration and specimen mounted on the right-hand corresponds to *Veitch Z 63*) Photo AMES! Xerox of illustration of flower made by L. A. Garay, AMO!

Synonym: *Epidendrum reflexum* Ames & C.Schweinf., Sched. Orchid. 8: 49. 1925. Type: COSTA RICA: Arenal, 600 m, 28 September 1923, ***Juvenal Valerio 61.*** Holotype:US! photo AMES! Xerox of illustration of flower made by L. A. Garay, AMO!

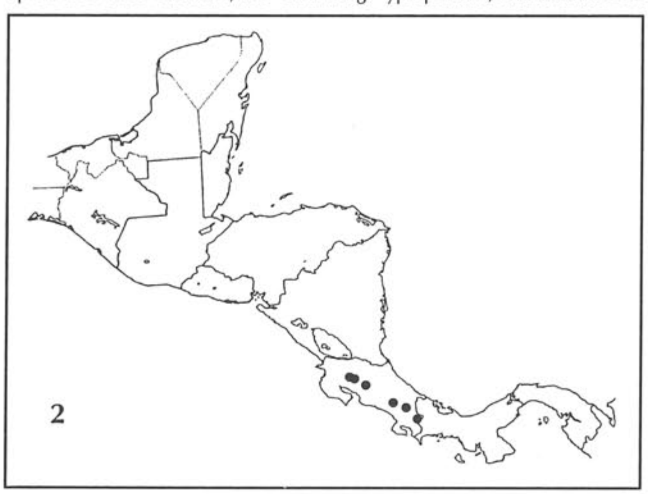
Hierba epífita, simpodial, cespitosa, 27-47 cm de alto. **Raíces** basales, carnosas, delgadas, 0.5-1 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, rectos, arqueados a erectos, 21-38 x 0.2-0.5 cm, cubiertos en la mitad basal por 5-6 vainas tubulares, agudas, no foliares, algo infladas en el ápice (en ejemplares herborizados), escariosas y fibrosas con el tiempo. **Hojas** 5-8, distribuidas en la mitad apical del tallo, por lo general las basales algo más pequeñas, articuladas, alternas, vainas tubulares, 1-3.5 x 0.2-0.7 cm de largo; lámina oblongo lanceolada a angostamente elíptica, acuminada o raramente aguda, margen entero, 5-12.5 x 0.8-2.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, corta, racemosa, florece una sola vez, arqueada nutante, multiflora, densa, nunca más larga que la hoja apical, 5-11 cm de largo; pedúnculo delgado, lateralmente aplanado, algo ancipitoso, recto, 5 cm de largo; provisto de 3 brácteas acuminadas, de tamaño decreciente, la bráctea basal tubular, conduplicada, algo ancipitosa, 27-33 mm de largo; el par superior (más corto), triangular lanceoladas, amplexicaules, 12-20 mm de largo; raquis oculto casi en su totalidad por las brácteas florales. **Brácteas florales** de alrededor de la mitad del largo del ovario, triangular lanceoladas, acuminadas, abrazadoras, 2-12 mm de largo. **Ovario** filiforme, algo engrosado justo detrás del perianto, no inflado, no ornamentado, 13-17 mm de largo. **Flores** ca. [15] 35-40, sucesivas, resupinadas, blanco verdosas o con sépalos y pétalos verde limón algo teñidos de rosado en la base, labelo blanco a blanco rosado, columna verdosa con el ápice blanco a rojo purpúreo, fragancia vespertina muy desagradable. **Sépalos** fuertemente reflexos, libres, cóncavos, redondeados en el ápice, 3-nervados, con una quilla dorsal prominente y erosa, margen entero, extendido, 8-9 x 2.5-3 mm; el **dorsal** angostamente elíptico, los **laterales** oblongo oblanceolados. **Pétalos** reflexos, libres, filiformes, ápice redondeado, algo inflexo, 1-nervados, margen entero, 8 x 0.4 mm. **Labelo** unido a la columna, 3-lobado, algo cuadrado en aspecto general, fuertemente convexo, cordado en la base, 4.5-5 x 5-6 mm; bicalloso, los callos delgados, algo lateralmente aplanados, disco provisto de 3 quillas prominentes, carnosas, la quilla central ligeramente más larga que el par lateral, todas desvaneciéndose cerca del la base del lóbulo medio; lóbulos laterales transveralmente oblongo elípticos, margen irregular, 2 x 4 mm; lóbulo medio dividido en un par de lóbulos oblongos, divaricados, separados entre sí por un seno amplio, con el margen entero, 1 x 4 mm. **Columna** delgada, ligeramente arqueada, 6-7 mm de largo. **Clinandrio** reducido, margen entero. **Antera** anchamente obovoide, 4-locular. **Polinios** 4, tipo "ala de pájaro", fuertemente comprimidos lateralmente; caudículas laminares, algo más cortas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, de ¼ del largo de la cavidad estigmática. **Nectario** corto, apenas penetrando el ovario, no inflado, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, terete, thin, straight, arching to erect, the basal half covered by 5-6 tubular, acute, non-foliar sheaths, scarious, becoming fibrous with time. **Leaves** 5-8, distributed along the apical half of the stem, articulate, alternate, the sheaths tubular, terete, blade oblong-lanceolate to narrowly elliptic, acuminate or rarely acute, margin entire, the basal leaves generally smaller. **Inflorescence** apical, short, racemose, flowering only once, arching-nutant, densely many-flowered, never longer than the apical leaf; peduncle thin, laterally compressed, somewhat ancipitose, straight, provided with 3 acuminate bracts, decreasing in length, the basal bract usually tubular, conduplicate, somewhat ancipitose, thy upper, shorter bracts triangular-lanceolate; rachis nearly hidden by the floral bracts. **Floral bracts** half as long as the ovary, triangular-lanceolate, acuminate. **Ovary** filiform, somewhat thickened behind the perianth. **Flowers** c. [15] 35-40, successive, resupinate, greenish white or sepals and petals lime green somewhat tinged with pink at the base, lip white or pale pink, column greenish with the apex white or purple-red; afternoon fragrance very disagreeable. **Sepals** strongly reflexed, free, concave, rounded at the apex, 3-veined, with a prominent dorsal, erose keel, margin entire, spreading, the dorsal sepals narrowly elliptic, the lateral sepals oblong-oblanceolate. **Petals** reflexed, free, filiform, apex rounded somewhat inflexed, 1-veined, margin entire. **Lip** united to the column, 3-lobed, somewhat square in outline, strongly convex, base cordate; bicallose, the calli thin, somewhat laterally flattened, disc provided with 3 prominent, fleshy, rounded keels, the mid-keel slightly longer and the lateral pair, disappearing near the base of the midlobe; lateral lobes transversely oblong-elliptic, margin irregular; midlobe divided into a pair of oblong, divaricate lobes, separated by a wide sinus, margin entire. **Column** thin, slightly arching. **Clinandrium-hood** reduced, margin entire. **Anther** widely obovoid, 4-celled. **Pollinia** 4, "bird-wing" like, strongly laterally compressed; caudicles laminar, somewhat shorter than the pollinia. **Rostellum** apical, slit. **Nectary** short, barely penetrating the ovary, not inflated, smooth.

OTHER SPECIMENS: COSTA RICA: Without data, *Warscewicz s.n.*, W 49562! **Alajuela:** Reserva Biológica Monteverde, Río Peñas Blancas, 850 m, 5 IX 1989, *Bello 1169*, INB! MO! Ibid. 3 VIII 1986, *Haber 5894A*, MO! Ibid. 820 m, 10 VI 1987, *Haber 7249*, MO! **Guanacaste:** Tilarán-El Arenal, carr. 142 km 27.5, 630 m, 26 I 1988, pressed cult. 21 XII 1989, *Hágsater 9474*, AMO! Ibid. 9 XII 1990, *Hágsater 9474*, AMO x2! Ibid. 7 VIII 1997, *Hágsater 9474*, AMO! Ibid. 21 VII 2000, *Hágsater 9474*, AMO! Vicinity of El General, 850 m, VI 1936, *Skucht 2777*, AMES! BM! K! US! **Puntarenas:** Las Cruces Biological Station along Río Jaba, 1200 m, 8 VII 1998, *Boyle 5417*, USJ! **San José:** km 37 San Isidro-Sta. Rosa-Savegre, por Pacuar, ca. 800 m, col. 8 III 1986, pressed cult. 2 XI 1987, *Hágsater 8289*, AMO! (Illustration voucher)

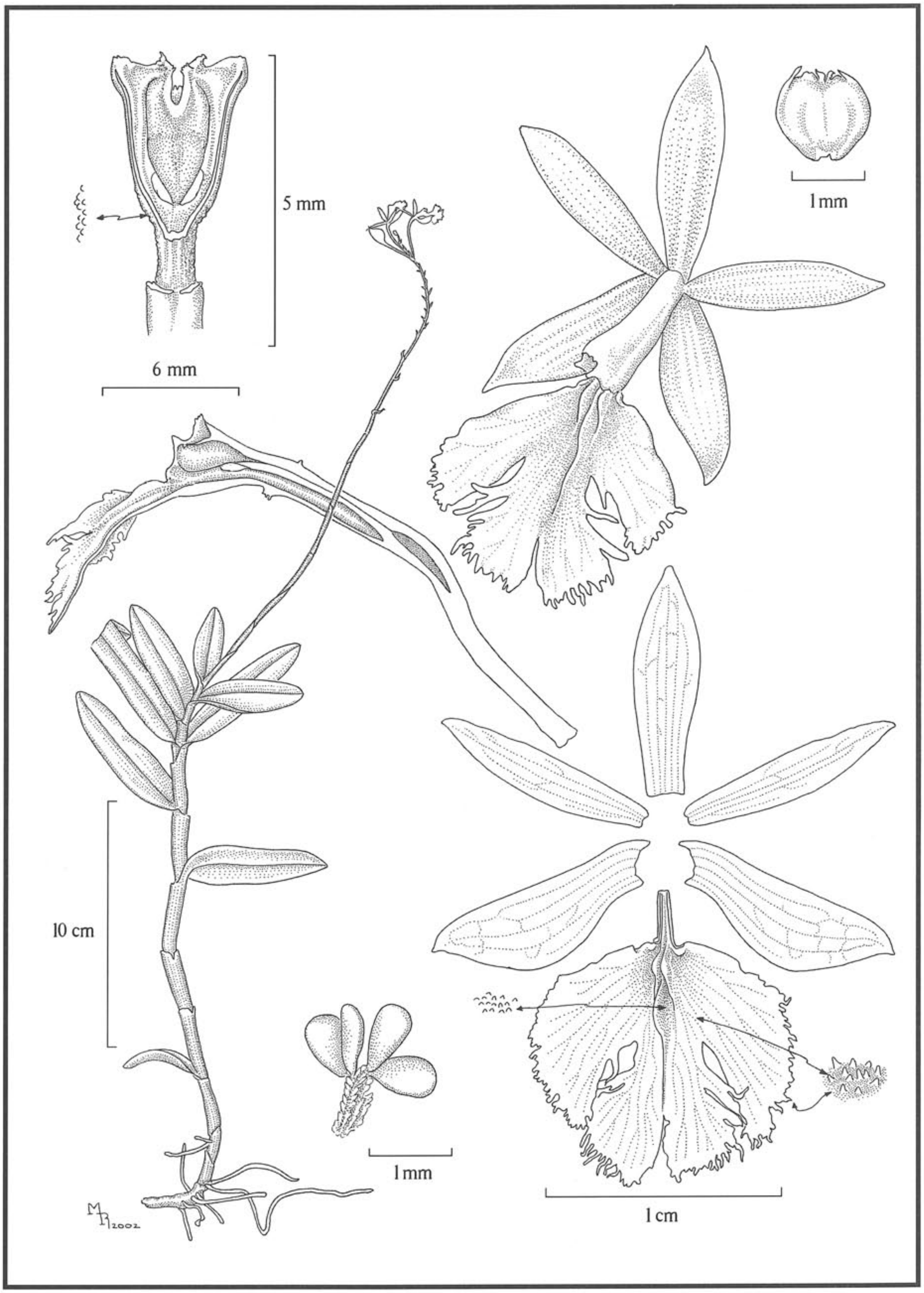
DISTRIBUTION AND ECOLOGY: Endemic to Costa Rica, from the cordillera de Tilarán, along the Pacific ridge to Las Cruces, epiphytic, at 630-850 [1200] m altitude. Flowering from June to September [in cultivation in Mexico in November-December].

RECOGNITION: *Epidendrum resectum* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, and Turialvae Subgroup which has a racemose and few-flowered inflorescence on an elongate peduncle, usually producing new racemes over the years and thus pluriracemose. The species is recognized by the short plants (to 47 cm tall)) the generally acuminate leaves, short, racemose, arching-nutant inflorescence, shorter than the apical leaf, with multiple flowers that open in succession, sepals and petals strongly reflexed, the lip convex; in pressed specimens the flowers are recognized by the the acute angle formed by the lip and the apex of the column. Other species in this group generally have a paniculate inflorescence which exceeds the apical leaf in length. The short, compact inflorescence and flowers are somewhat reminiscent of *Epidendrum ionophyllum* Ortiz, though that species produces new racemes in successive years, and the lip has the margin of the lateral lobes lacerate.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: from the Latin, *reseco*, cut off, short, in reference to the short, racemose inflorescence, characteristic of this species.



EPIDENDRUM REVERTIANUM (Stehlé) Hágsater **Plate 1171**

EPIDENDRUM REVERTIANUM (Stehlé) Hágsater, Orquídea (Mexico City) 13 (1-2): 216. 1994.

Basionym: *Epidendrum calanthum* Rchb. f. & Warsc. var. *revertianum* Stehlé, Fl. descr. Ant. Fr. 1: 141. 1939. Lectotype designated by L. A. Garay[1]: Guadeloupe: Goyave, ***Stehlé 2894***, NY. Superfluous lectotype designated by C. Sastre[2]: Martinique: Trinité, talus latéritique, 60 m, 11 July 1939, *Stehlé & Egler 3563*, P.

Synonym: *Epidendrum calanthum* Rchb.f. & Warsc. subsp. *revertianum* (Stehlé) Sastre, Orchidophile (Asnières) 93: 156. 1990.

Hierba terrestre o raramente epífita, cespitosa, erecta, de 50-110 [180] cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, gruesas, 1-2 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, 21 [-120] x 0.36-0.7 cm. **Hojas** ca. 11, distribuidas a lo largo de la mitad superior del tallo, subcoriáceas, alternas; vaina tubular, finamente estriada en seco, 1.0-2.8 cm de largo; lámina oblongo lanceolada, ápice redondeado, diminutamente bilobado, margen entero, 3.3-6.5 [10.5] x 1.1-1.5 [2.6] cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, erecta, 20 [58] cm de largo; pedúnculo terete, delgado, recto, elongado, 13.5 [48] cm de largo; cubierto totalmente por 7 [10] brácteas tubulares, agudas, imbricadas, fibrosas con el tiempo, 1.9-2.1 [6.1] cm; raquis terete, delgado, recto, 7.0 cm de largo. **Brácteas florales** más cortas que el ovario, triangulares, agudas, gradualmente más pequeñas hacia el ápice, 2-7 mm de largo. **Ovario** terete, delgado, no inflado, no ornamentado, 12-17 [22] mm de largo. **Flores** 25-30, sucesivas, resupinadas; color blanco, callo amarillo; sin fragancia. **Sépalos** extendidos, libres, angostamente oblanceolados, agudos, diminutamente apiculados, 5-nervados, margen entero, 9.5-10.2 x 2.7-3.3 mm; los **laterales** oblicuos. **Pétalos** extendidos, libres, oblongos, agudos, 3-nervados, las nervaduras cortamente ramificadas, margen entero, 9.5 x 1.8 mm. **Labelo** unido a la columna, trilobado, base truncada, margen laciniado, 10 x 11 mm; bicalloso, los callos delgados, laminares, cortos; disco unicarinado, la carina laminar, prominente en la mitad basal, gradualmente muy delgada hasta el seno del lóbulo medio, diminutamente papilosa; lóbulos laterales transversalmente rectangulares, oblicuos, .5.2 x 5.0 mm; lóbulo medio flabeliforme, bilobado, 6 x 7 mm. **Columna** delgada, recta, obcónica, arqueada hacia arriba en el ápice, papilosa en la base, 5 mm de largo. **Clinandrio** corto, margen diminutamente dentado. **Antera** suborbicular, margen dorsal irregular, 4-locular. **Polinios** 4, obovoides, subiguales, caudículas formadas por tétradas en forma de tejas apiladas. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/3 del largo de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, delgado, diminutamente papiloso. **Cápsula** no vista.

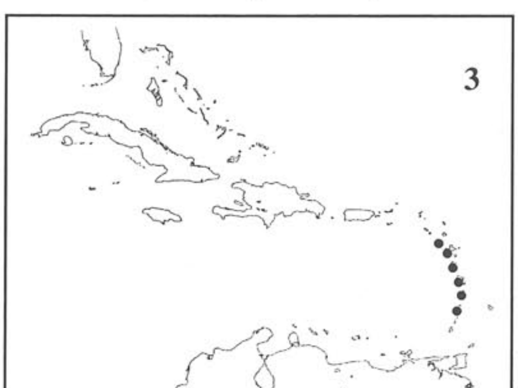
Terrestrial, rarely epiphytic, caespitose, erect **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, thin. **Leaves** about 11, distributed throughout the upper half of the stem, subcoriaceous, alternate; sheath tubular, minutely striated when dry; blade oblong-lanceolate, apex rounded, minutely bilobed, margin entire. **Inflorescence** apical, racemose, erect; peduncle terete, thin, straight, elongate, totally covered by tubular, imbricating bracts; rachis terete, thin, straight. **Floral bracts** shorter than the ovary, triangular, acute, gradually shorter. **Ovary** terete, thin. **Flowers** 25, successive, resupinate, white, the callus yellow, non-fragrant. **Sepals** spreading, free, narrowly oblanceolate, acute, minutely apiculate, 5-veined, margin entire, the laterals oblique. **Petals** spreading, free, oblong, acute, 3-veined, the veins short-branched, margin entire. **Lip** united to the column, 3-lobed, base truncate, margin laciniate; bicallose, the calli narrow, laminar, short, disc one-keeled, the keel laminar, the basal half prominent, gradually thinner until the sinus of the midlobe, minutely papillose; lateral lobes transversely rectangular, oblique; midlobe flabellate, bilobed, with a deep narrow sinus. **Column** thin, straight, dilated apically, slightly arched upwards at the apex, papillose at the base. **Clinandrium hood** short, margin minutely dentate. **Anther** suborbicular, dorsal margin irregular, 4-celled. **Pollinia** 4, obovoid, subequal, caudicles formed by tetrads appearing like a pile of roof-tiles. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, thin, minutely papillose.

OTHER SPECIMENS SEEN: DOMINICA: Hutton Estates, 10 IV 1940, *Hodge 3025*, AMES x3! Stonefield, 25 II 1967, *Taylor s.n.*, US! **GUADELOUPE:** January 1821, *Balbis s.n.*, G! 1839, *Beaupertius s.n.*, P! Without locality, *P. Duss 3360*, MO! Ste. Rose, 25 III 1939, *Questel 4003*, P! US! **MARTINIQUE:** St. Pierre, 3 March, *Ames s.n.*, AMES! Ajoupa-Bouillon, 1879, *P. Duss 4486A*, AMES! NY! US! Gross Morne, 300 m, cult. Ajoupa-Bouillon, 16 VII 1986, *Henri & Claude Jeannet sub Hágsater 8742*, AMO! (Illustration voucher). Ajoupa-Bouillon, 1868, *Hahn 94*, G! P! W! St. Pierre, *Hahn 99*, G! P! Without locality, March 1885, *Kidder s.n.*, AMES! Coulée River, 175-450 m, 11 XII 1960, *Proctor 21794*, AMES! Morne Rouge, 600 m, 1 IV 1954, *Renz 8183*, Herb. Renz! Mt. Pelée, 850-900 m, 29 I 1970, *Renz 10482*, Herb. Renz! Trinité, 100 m, 26 V 1946, *Stehlé 6920*, US! Deux Choux, 20 V 1975, *Sastre 4216*, AMES! **MONTSERRAT:** Mt. Soufrière, 18 II 1907, *Shafer 590*, NY! **ST. LUCIA:** Saltibus, 1100 ft, 7 III *1986, Slane* 839, AMES! [Measures given in square brackets taken from this specimen.] **ST. VINCENT:** trail to Soufriere, 1 IV 1950, *Howard 11193*, AMES x2! Soufriere, 1-2000 ft, *Howard 17869*, AMES! Trail near summit of Soufriere, 3000 ft, 2 II 1972, *Howard 18026*, AMES!

OTHER RECORDS: MARTINIQUE: near St. Pierre, March 3, *Ames s.n.*, watercolour illustration by Blanche Ames, AMES!

DISTRIBUTION AND ECOLOGY: Endemic to some of the lesser, windward, Antilles: Dominica, Martinique, Guadeloupe, St. Lucia, Montserrat and St. Vincent; terrestrial or rarely epiphytic, at about 100-900 m altitude. Flowering from December to April, July and September.

RECOGNITION: *Epidendrum revertianum* belongs to the Schistochilum Group, Calanthum Subgroup which is characterized by the caespitose habit, erect, simple, cane-like stems, normally elongate peduncle of the inflorescence, erect raceme of resupinate, showy, colorful flowers, with the lip adorned by two calli and a median, narrow keel. The species is recognized by the terrestrial habit [reported as rarely epiphytic], suberect, compact leaves and the white flowers and the lip composed of four subequal lobes, the laterals more or less at a 45° angle. It closely resembles *E. calanthum* Rchb. f. & Warsc., a widespread species of continental South America with smaller flowers, usually purple tinged but often with pure-white albino forms. *Epidendrum ibaguense* Kunth is also caespitose, has yellow to reddish colored flowers and a straight column; it has been confused with the much more widespread *E. radicans* Pav. ex Lindl. which is similarly colored but has a repent habit, roots all along the stems and a curved column.

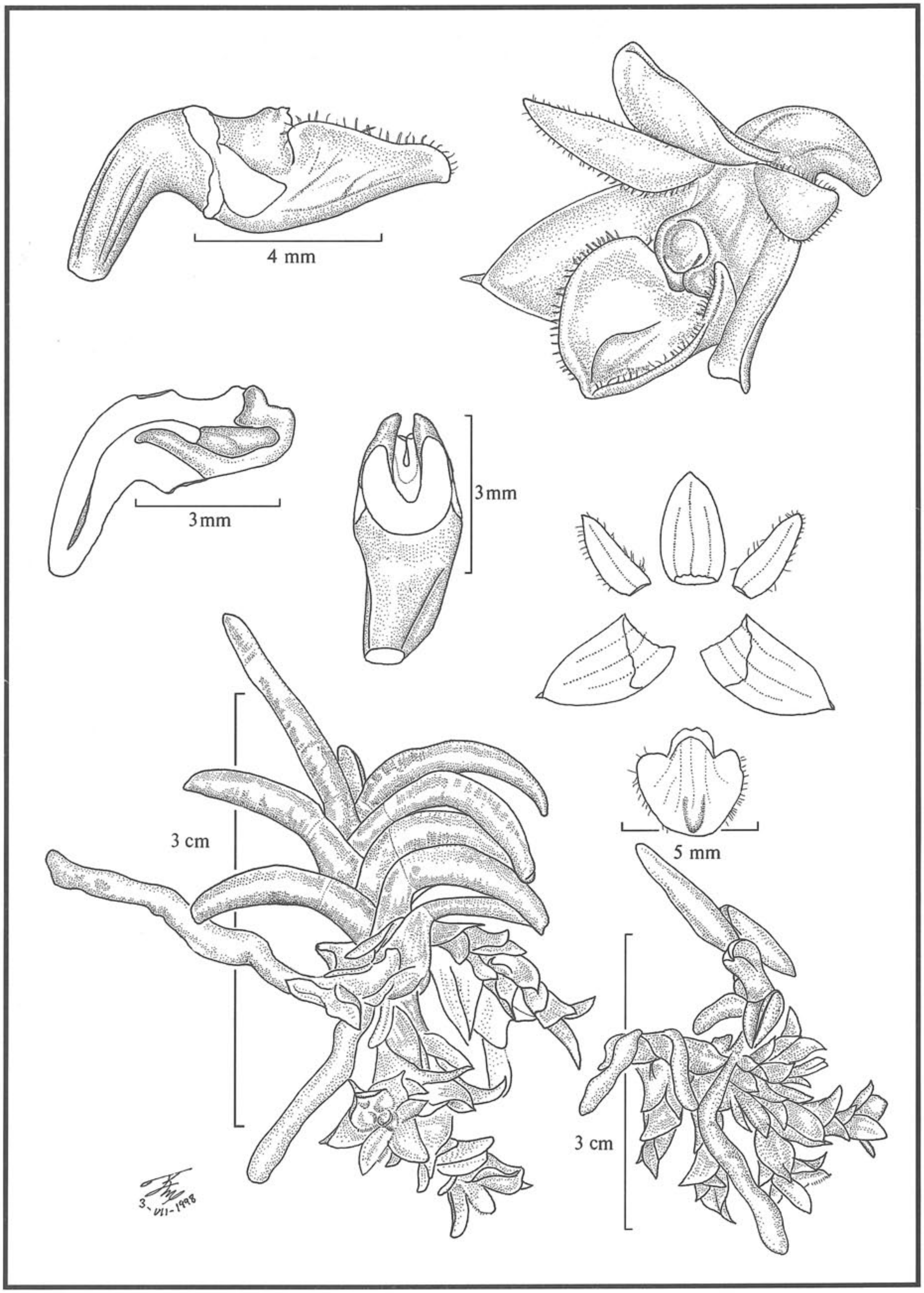


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Mr. Revert, who collected in the French Antilles together with Stehlé in January, 1939.

REFERENCES: [1] Garay, Leslie A, & Herman R. Sweet, 1974. Orchidaceae in Richard A. Howard, **Flora of the Lesser Antilles**, pg 139-141. [2] Sastre, Claude, 1990. *Epidendrum* Bambusiformes de Guadeloupe et de Martinique (1e partie). **Orchidophile (Asnières)** 93: 149-158.

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Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM RHODOVANDOIDES Hágsater

Plate 1172

EPIDENDRUM RHODOVANDOIDES Hágsater, *sp. nov.*

Type: COLOMBIA: Antioquia: 1 km antes del puerto del Boquerón del Cerro del Padre Amaya, 2380 m, 21 April 1983, ***E. Hágsater, R. Escobar, C.A. & J. Luer, A. Pridgeon & M. Webb 7246.*** Holotype: AMO! (plant in liquid, illustration voucher.) Topotype: west of Medellín, east of Boquerón, 2330 m, 22 IV 1983, ***C. & J. Luer, M. Webb, R. Escobar, A. Pridgeon & E. Hágsater 8762.*** SEL!

Epidendro sophronitoidi F.Lehm. & Kraenzl. simile sed floribus parvis cardinalibus, segmentis floralibus acutis usque subacutis, sepalis trivervatis, discedens.

Hierba epífita, monopodial, provisto de hojas dísticas, imbricadas, hasta de 2 cm de alto. **Raíces** basales, carnosas, rosado amoratadas, ca. 1.0-1.5 mm grosor. **Tallo** erecto, ocasionalmente ramificado, tipo caña, terete, 1-2 cm de largo, frecuentemente se produce un tallo nuevo de un entrenudo basal o medio del tallo anterior, generalmente por debajo de la hoja más vieja. **Hojas** 6-11, distribuidas a lo largo del tallo, dísticas en un solo plano, articuladas, verde oscuro con filos amoratados; vaina tubular, imbricada, verde claro, rugosa, 5-6 mm de largo; lámina linear subulada, arqueada en posición natural, suculenta, coriácea, acanalada, subaguda, margen apical finamente papiloso, 1.2-5 x 0.3-0.6 cm. **Bráctea espatácea** ausente. **Inflorescencias** laterales, florece durante varios años, rastrera colgante, hasta de 2 cm de largo; complicada, producida cerca de la base del tallo, dando la apariencia de ser un tallo abortivo de segmentos sucesivos, cada segmento (de 5-10 mm de largo) con varios entrenudos, cada entrenudo provisto con una bráctea ovada, en ocasiones tubular, aguda, estriada y escariosa, 7 x 3 mm; el nuevo segmento se produce de la parte superior del último entrenudo. **Brácteas florales** más largas que el ovario, semejantes a las de la inflorescencia, ovado lanceoladas, acuminadas, 6-7 mm de largo. **Flores** solitarias, se produce una sola en cada segmento, no resupinadas; coloración rojo cardenal a magenta rojizo, uniforme, sin datos de fragancia. **Ovario** terete, arqueado hacia el ápice, no inflado, ligeramente estriado, 4.5 mm de largo. **Sépalos** carnosos, generalmente glabros (raramente con algunos tricomas cortos y escasos en la superficie ventral), 3-nervados, margen entero, extendido, 4-5.5 x 2.5-3 mm; el **dorsal** extendido, libre, angostamente ovado, subagudo; los **laterales** entreabiertos, unidos de manera oblicua a las 2/3 partes basales de la columna, triangular ovados, agudos, cortamente aristados, oblicuos. **Pétalos** extendidos, libres, angostamente lanceolados, subagudos, 1-nervados, con algunos tricomas cortos y escasos en la superficie ventral, margen cortamente ciliado, extendido, 3.7 x 1.3 mm. **Labelo** unido a la columna, subcordiforme, casi tan ancho como largo, carnoso, ápice truncado, redondeado, margen corta y escasamente ciliado, los lados erectos formando una cuchara, ecalloso, con una carina subapical roma y prominente; 3 x 4 mm. **Columna** corta, gruesa, ligeramente arqueada hacia arriba, 2.2 mm de largo. **Clinandrio** reducido, margen entero. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** poco profundo, sin penetrar el ovario, liso, no inflado. **Antera** ovoide, ápice escasamente ciliado. **Polinios** 4, obovoides. **Cápsula** subsésil, globosa, con el perianto persistente; pedicelo muy corto; cuerpo 7-9 x 6-9 mm; cuello apical reducido, 2 mm de largo.

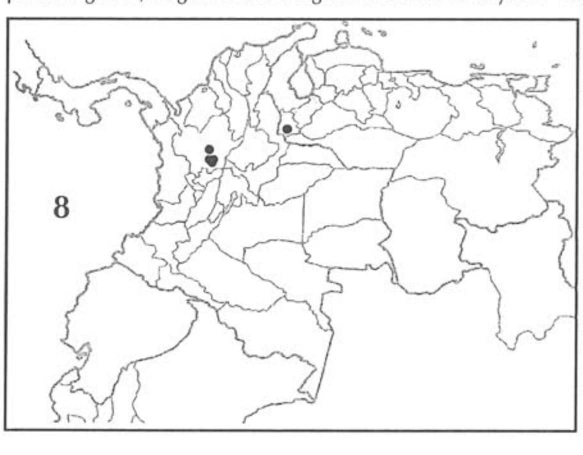
Epiphytic, monopodial **herb**, provided with distichous, imbricating leaves, to 2 cm tall. **Roots** basal. fleshy, pink-purple. **Stem** erect, branching, cane-like, terete, an occasional new stem produced from a basal or middle internode of the previous stem, generally below the oldest leaf, above the inflorescences. **Leaves** 6-11, distributed throughout the stem, distichous, articulate, dark green with the margins tinged purple; sheath tubular, imbricating, light green, rugose; blade linear-subulate, arching in natural position, succulent-coriaceous, canaliculated, subacute, margin minutely papillose. **Inflorescences** lateral, flowering during several years, creeping-pendent, complicated, produced near the base of the stem, appearing as an abortive stem, made of successive segments with various internodes, each internode provided with an ovate bract, occasionally tubular, acute, striated and scarious; the next segment produced from the upper part of the previous segment. **Flora bracts** longer than the ovary, similar to the bracts of the inflorescence, ovate-lanceolate, acuminate. **Flowers** solitary, a single one produced from each segment of the inflorescence, non-resupinate; color a uniform cardinal-red to reddish magenta. **Ovary** terete, arching near the apex, not inflated, slightly striated. **Sepals** fleshy, generally glabrous (rarely with a few short trichomes on the ventral surface), 3-veined, margin entire, spreading; the dorsal sepals spreading, free, narrowly ovate, subacute; the lateral sepals partly spreading, obliquely united to the basal 2/3 of the column, triangular-ovate, acute, short aristate, oblique. **Petals** spreading, free, narrowly lanceolate, subacute, 1-veined, with a few, short trichomes on the ventral surface, margin short ciliate, spreading. **Lip** united to the column, subcordiform, nearly as wide as it is long, fleshy, apex truncate, rounded, margin short and scarcely ciliate, the sides erect forming a spoon, ecallose, with a prominent, subapical, rounded keel. **Column** short, thick, slightly arching upwards. **Clinandrium-hood** reduced, margin entire. **Rostellum** subapical, slit. **Nectary** shallow, without penetrating the ovary, smooth, not inflated. **Anther** ovoid, apex scarcely ciliate. **Pollinia** 4, obovoid. **Capsule** subsessile, globose, the perianth persistent; pedicel very short, apical neck short.

OTHER SPECIMENS: COLOMBIA: Antioquia: La Unión, 2450 m, 9 IX 1984, *Dodson 15253*, MO! SEL! Cumbre cerca de Las Palmas, camino entre Medellín y El Retiro, ca. 2500 m, 8 XI 1945, *Hodge 6702*, AMES! Ríonegro, 2300 m, 26 IX 1883, *Lehmann 3124*, G! Ríonegro, 2280 m, 26 IV 1983, *Luer 8833*, RPSC! SEL! El Retiro, 2500 m, IV 1968, *Ortiz-Valdivieso 82*, HPUJ! entre Las Palmas y Ríonegro, 2300 m, 12 VIII 1957, *Ospina 185*, AMES! Without locality, *Ospina 194 a*, JAUM! **VENEZUELA: Táchira:** Río Copas, 2000 m, 13 V 1951, *Renz 6964*, RENZ!

OTHER RECORDS: COLOMBIA: Antioquia: Andes Colombianos, ca. 2000 m, *Duque 186*, color photo, AMO! Santa Helena, montañas que rodean Medellín, ca. 2500 m, *Duque 391*, color photo, AMO! Hort. Medellín, *Duque 873*, color photo, AMO! El Retiro, *Ortiz Valdivieso 82*, illustration, HPUJ!

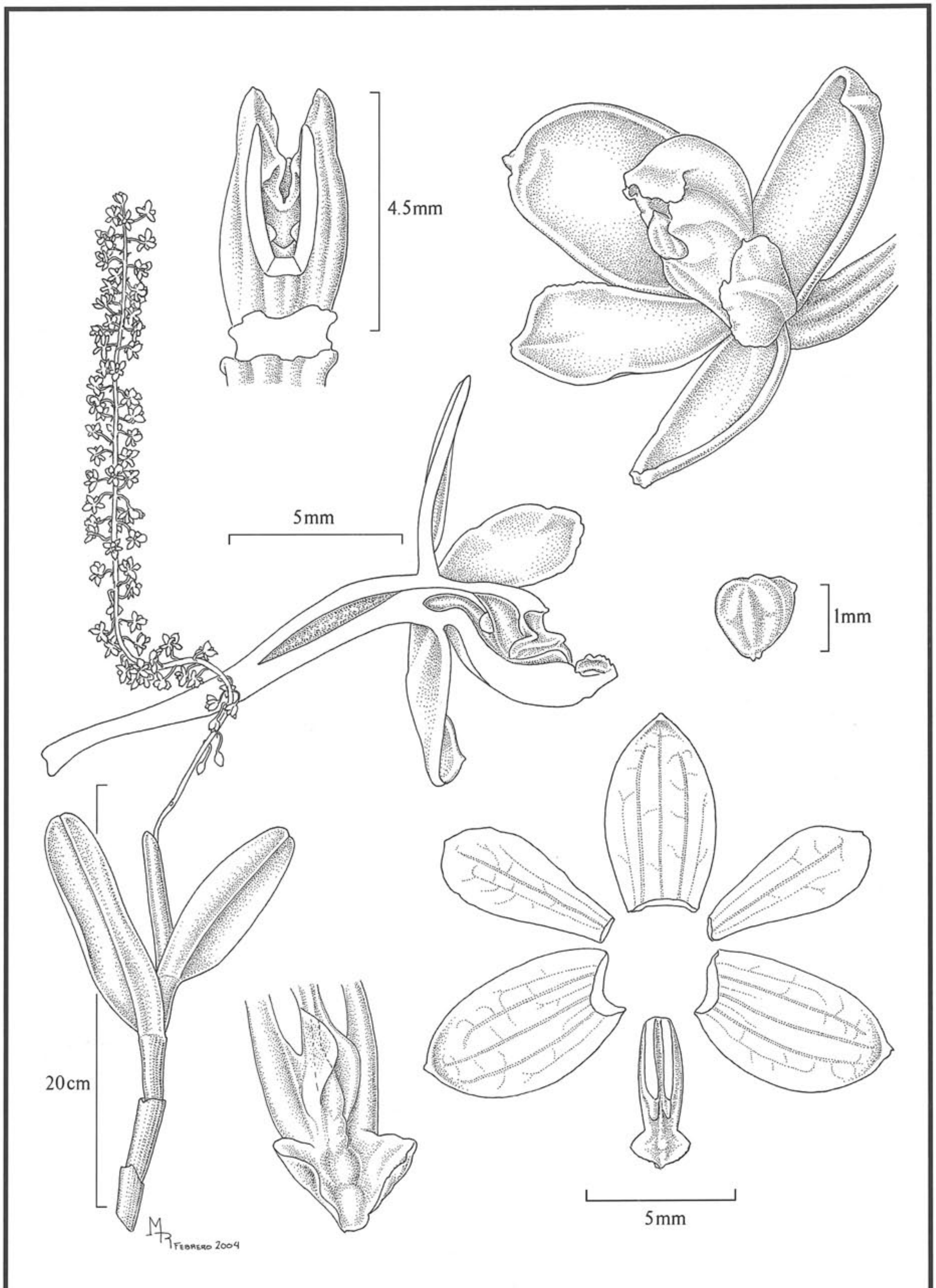
DISTRIBUTION AND ECOLOGY: Above Medellín, north of Bogotá and western Venezuela (Táchira) on trees at about 2000-2500 m altitude. Flowering in August to May.

RECOGNITION: *Epidendrum rhodovandoides* belongs to the *Takulumena* group which is recognized by the small, *Vanda*-like plants, with simple, imbricating, distichous leaves, and several lateral, complicated, inflorescences produced from the base of the stem, producing new, single-flowered segments over several years. The species has small plants, with fleshy, arching, semiterete, distichous and imbricate leaves, with a complicated basal inflorescence bearing individual, non-resupinate, cardinal-red to reddish magenta flowers at the apex of each segment, the sepals 4-5.5 mm long, the column 2.2 mm long, the petals and lip with a short ciliate margin. It is similar and has been confused with *E. sophronitoides* F.Lehm. & Kraenzl. which is larger overall, sepals 10-16 mm long and has brownish green or yellow green, unornamented flowers; which is found in southern Colombia and northern Ecuador. *Epidendrum dasyanthum* Hágsater *(Takulumena vazquezii* Szlach.) has larger flowers, (sepals 9-13 mm long), the column 4-5 mm long, with the sepals, petals and lip pilose. The flowers of *E. carmelense* Hágsater & Dodson, are very similar, though the plants are vegetatively very different, this species having a succession of unifoliate stems with an apical, 1-2 flowered inflorescence. *Epidendrum psilosepalum* Hágsater & E.Santiago has somewhat short plants, reddish yellow-green flowers, the sepals glabrous, petals and lip strongly pillose, with medium-sized flowers, the sepals 7-8 mm long.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek ροδο, rose, rosy, and *Vanda*, the genus of Asian orchids.



EPIDENDRUM RHOMBIMANCUM Hágsater & L.Sánchez **Plate 1173**

EPIDENDRUM RHOMBIMANCUM Hágsater *et* L. Sánchez, *sp. nov.*

Type: ECUADOR: Loja: Cebada près Loja, 9 January 1882, ***Poortmann 279.*** Holotype: P! (Illustration voucher).

Epidendro pseudosarcoglottis Hágsater & Dodson simile sed foliis latioribus, petalis obovatis, labello transverse elliptico margine minute sinuato et cum callis binis laminaribus, differens.

Hierba simpodial, rastrera, epífita, 45-57 cm de alto incluyendo la inflorescencia. **Raíces** de la base de cada tallo, delgadas, carnosas, 0.7-1 mm de grosor. **Tallo** producido de los nudos inferiores del tallo anterior, a 1-2 cm arriba de la base, erectos, rectos, teretes en la base, lateralmente aplanados hacia el ápice, 20-25 x 0.4-0.8 cm. **Hojas** 3-4 por tallo, distribuidas en el tercio apical del tallo, vainas foliares, estriadas y finamente rugosas en seco, las inferiores no foliáceas, escariosas, 25-40 mm de largo; lámina elíptico lanceolada, ápice obtuso, aristado, margen entero, 9-12 x 2.4-3 cm. **Bráctea espatácea** 1, ancipitosa, oblonga, aguda, 6-10 x 1.6-1.7 cm. **Inflorescencia** apical, racemosa, erecta, alargada, densa, 25-32 cm de largo; el pedúnculo erecto, 7.5-13.5 cm de largo, cubierto entre 3/4 por la bractea espatácea, el raquis recto, 18-25 cm de largo. **Flores** 30-60, simultáneas, no resupinadas, sépalos, pétalos y columna verde a amarillo verduzco, labelo blanco, rojizo en la parte dorsal; fragancia fuerte de "Reseda". **Brácteas florales** mucho más cortas que el ovario, triangulares, agudas, 0.8-1 mm de largo. **Ovario** corto, no inflado, liso, 11-12 mm de largo. **Sépalos** extendidos, elípticos, obtusos, carnosos, margen entero, con una quilla dorsal apical, 6.0-6.4 x 3.5-3.7 mm, el **dorsal** con 3 venas principales que se prolongan hasta cerca del ápice, y 2 que llegan hasta la mitad; los **laterales** oblicuos, con 3 venas principales que se prolongan hasta cerca del ápice, y 4 que llegan hasta la mitad. **Pétalos** extendidos, obovados, obtusos, margen ligeramente ondulado hacia el ápice, 3-nervados, 6.0-6.2 x 2.2-2.5 mm. **Labelo** unido a la columna, entero, transversalmente elíptico, base cuneada, margen diminutamente sinuado, 3.2-3.5 x 1.8-2.0 mm; bicalloso, los callos laminares, triangulares, con una quilla central la cual se prolonga hasta el ápice, formada por una serie de engrosamientos. **Columna** corta, gruesa, recta, terminando en un par de alas laminares, redondeadas, 4.0-4.3 mm de largo. **Clinandrio** reducido, entero. **Rostelo** apical, hendido. **Antera** obovoidea, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos. **Lóbulos laterales del estigma** prominentes penetrando 1/2 de la cavidad estigmática. **Nectario** no inflado, redondeado, ligeramente traspasando el perianto, no ornamentado. **Cápsula** no vista.

Sympodial, repent, epiphytic **herb. Roots** from the base of each stem, thin, fleshy. **Stem** produced from the lower internodes, erect, terete at the base, laterally compressed towards the apex. **Leaves** 3-4 per stem, distributed along the apical third of the stem, sheaths striated, minutely rugose when dry, the lower ones non-foliaceous, scarious; blade elliptic-lanceolate, apex obtuse, aristate, margin entire. **Spathaceous bract** 1, ancipitose, oblong, acute, long and narrow. **Inflorescence** apical, racemose, erect, elongate, dense, ¾ of the peduncle covered by the spathaceous bract, rachis erect, straight. **Flowers** 30-60, simultaneous, non-resupinate, sepals, petals and column green to greenish yellow, lip white, dorsally reddish, with a strong fragrance. **Floral bracts** much shorter than the ovary, triangular, acute. **Ovary** short, not inflated, smooth. **Sepals** spreading, elliptic, obtuse, fleshy, margin entire, with an apical dorsal keel, the dorsal sepals with 3 main veins and 2 secondary veins, the lateral sepals oblique, with 3 main veins and 4 secondary veins. **Petals** spreading, obovate, obtuse, margin slightly undulate towards the apex, 3-veined. **Lip** united to the column, entire, transversely elliptic, base cuneate, margin minutely sinuate; bicallose, the calli laminar, triangular, with a central keel reaching the apex, formed by a series of knobs. **Column** short, thick, straight, ending in a pair of laminar, rounded wings. **Clinandrium-hood** reduced, entire. **Rostellum** apical, slit. **Anther** obovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Nectary** not inflated, rounded, barely penetrating the ovary, smooth.

OTHER SPECIMENS: PERU: Amazonas: Condorcanqui: Cordillera del Condor, cima del "tepui" Cerro Machinaza, 2150 m, 21 VII 1994, *Beltran 1138,* SEL! USM!

DISTRIBUTION AND ECOLOGY: Known from Ecuador and Peru, on the Cordillera del Condor and eastern range of the Andes, epiphyte in sclerophyllous bush, at 2150-3000 m altitude. Flowering January and July.

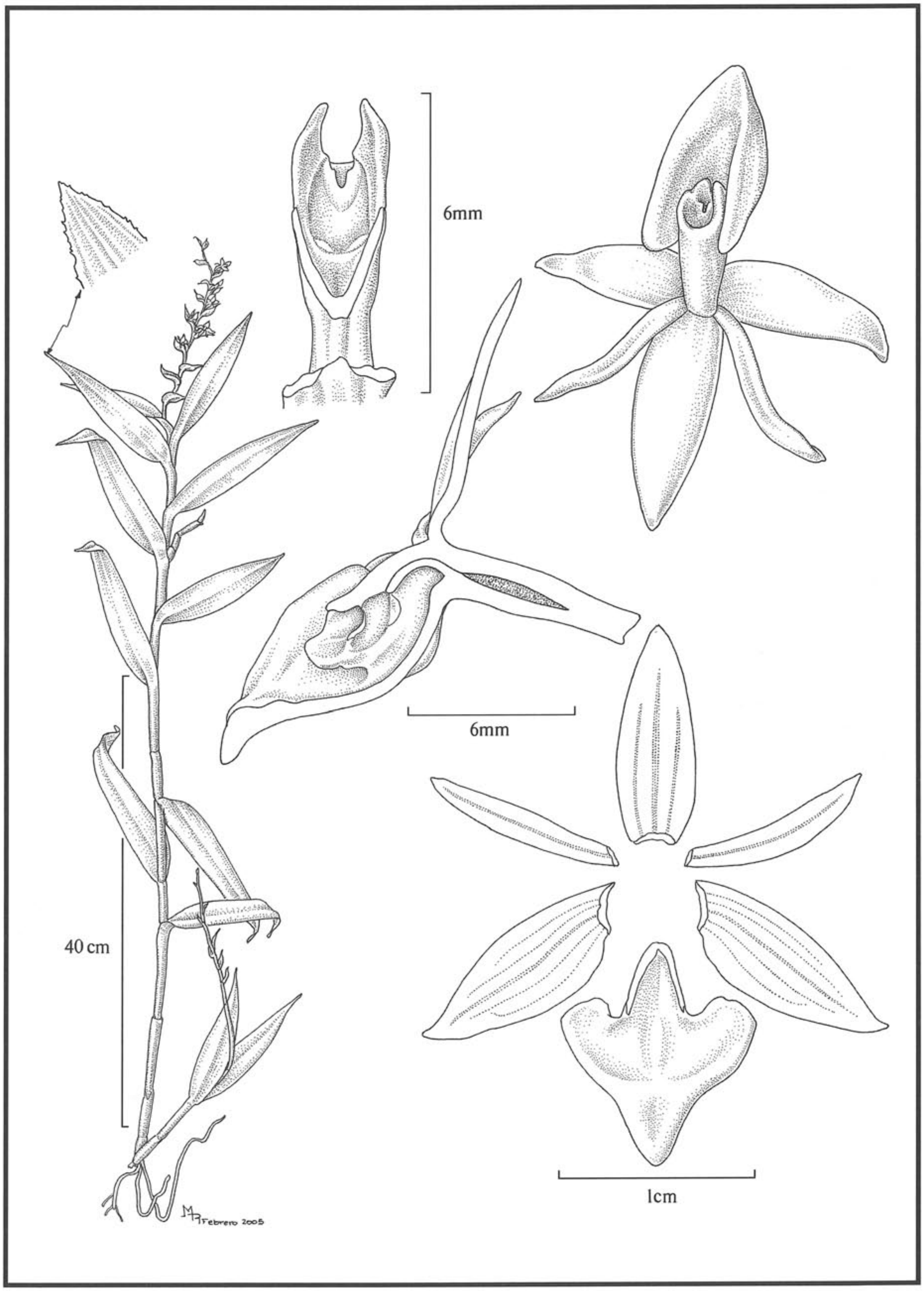
RECOGNITION: *Epidendrum rhombimancum* belongs to the Mancum Group and Subgroup, which is characterized by the sympodial growth, narrow spathaceous bracts with parallel sides, erect raceme with non-resupinate flowers and a generally reduced, fleshy lip. The species has elliptic-lanceolate leaves, 6 mm long sepals, obovate petals with the margin somewhat undulate towards the apex, the lip entire, transversely elliptic, bicallose, the keels laminar, triangular, with a central keel composed of a series of knobs. It is similar to *Epidendrum pseudosarcoglottis* but that species has narrower leaves, 1.5-2.2 cm wide, spatulate petals, and a rectangular lip with a single callus forming a wide cushion. *Epidendrum sarcoglottis* Schltr. has oblanceolate petals, a triangular, acute, claw-shaped lip with a single, cushion-shaped callus. *Epidendrum mancum* Lindl. has shorter plants, 15-25 cm tall, shorter, wider leaves, 2-6 x 1.7-4 cm, orange and yellow to brown-red flowers, the column and lip white, suborbicular to spatulate petals, a subquadrate lip, rarely with minute lateral lobes, bicallose lip, the calli elongate and prominent, with a short globose keel in the middle. *Epidendrum pseudomancum* Hágsater & L. Sánchez also has shorter plants, 19-38 cm tall, shorter, wider leaves (7-13 x 3.0-4.8 cm), sepals and petals externally reddish brown, internally the sepals olive green, the petals yellowish green, column and lip white, the lip occasionally with pink dots, petals suborbicular-spatulate, lip trulliform, apiculate.



5

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *rombicus*, diamond-shaped, and *mancum*, mutilated, imperfect, in reference to the fact that the species belongs to the Mancum Group and is distinguished by the transversely diamond-shaped lip.



EPIDENDRUM RIGIDIFLORUM Schltr. **Plate 1174**

EPIDENDRUM RIGIDIFLORUM Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 127. 1923.

Type: COSTA RICA: La Palma, an einer Böschung, 1400 m, März 1909, ***A. C. Brade 1289***, Holotype: B, destroyed. Isotype: AMES!

Hierba terrestre, monopodial, ramificada arriba, hasta de 150 cm de alto. **Raíces** en el tallo principal no vistas, escasas en algunas ramificaciones, carnosas, gruesas, blancas, 1.8-3 mm de grosor. **Tallos** escasamente ramificados subapicalmente, tipo caña, teretes, rectos; el principal hasta de 130 x 0.4-1.0 cm; las ramificaciones más cortas. **Hojas** 22 en el tallo principal; distribuidas en los 2/3 apicales del tallo, articuladas, alternas, desiguales, el par apical más angosto y ligeramente más pequeño; vaina tubular, finamente estriada, rugosa, algunas ligeramente infladas en el ápice, 17-60 x 4-10 mm; lámina lanceolada, acuminada, coriácea, margen apical denticulado, [7.5] 9.0-18 x 1.0-2.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, erecta, florece una sola vez, dística, secundiflora, 15-23 cm de largo; pedúnculo terete, delgado, recto, 10-20 mm de largo; raquis recto. **Brácteas florales** casi del doble del largo del ovario, lanceoladas, acuminadas, abrazadoras, coriáceas, gradualmente más pequeñas hacia el ápice, 11-22 mm de largo. **Flores** 10-19, simultáneas, aunque algunas apicales presentes aún en botón floral, no resupinadas, secundas, carnosas, rígidas, amarillas, pardo amarillentas a amarillo verdosas; fragancia nocturna dulce. **Ovario** corto, delgado, con las costillas prominentes, no inflado, liso, 8-10 mm de largo. **Sépalos** libres, extendidos, oblongo ovados, agudos, 3-nervados, margen entero, 10-12 x 4-7 mm; los laterales ligeramente oblicuos. **Pétalos** libres, extendidos, lineares, subagudos, 1-nervados, margen entero, 8.5-10 x 1.0-1.6 mm. **Labelo** unido a la columna, entero, anchamente ovado-cordiforme, cordado en la base, subagudo en el ápice, conduplicado en posición natural, sin abrazar el ápice de la columna, margen entero, 7-10 x 6-9 mm; ecalloso. **Columna** corta, gruesa, ligeramente arqueada hacia arriba en el ápice, 5-6 mm de largo. **Clinandrio** corto, margen entero. **Antera** obovoidea, 4-locular. **Polinios** obovoides, lateralmente aplanados, subiguales; caudículas suaves y granulosas casi tan largas como los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando 1/3 de la cavidad estigmática. **Nectario** poco profundo, sin penetrar el ovario, pubescente. **Cápsula** elipsoide; pedicelo, 5 mm de largo; cuerpo 27 x 15 mm; cuello apical, corto.

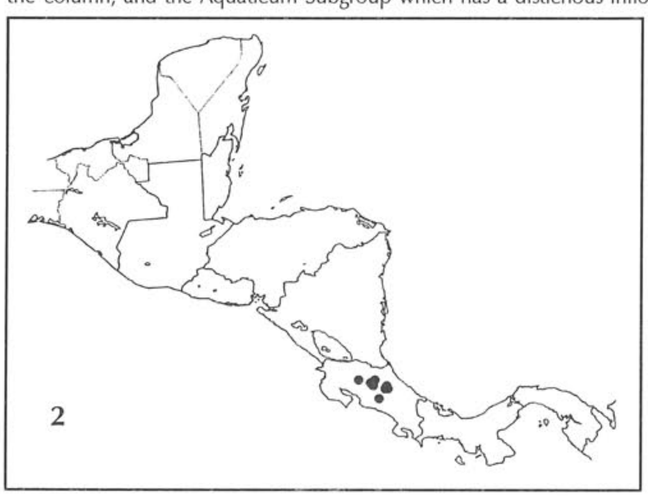
Terrestrial, monopodial herb, branching above. **Roots** basal, scarce from the branches, fleshy, thick, white. **Stems** scarcely branching subapically, cane-like, terete, thick, straight, the main stem tall, the branches shorter. **Leaves** 22 on the main stem, distributed throughout the apical 2/3, articulate, alternate, unequal, the apical pair narrower and somewhat shorter; sheath tubular, minutely striated, rugose, somewhat inflated towards the apex; blade lanceolate, acuminate, coriaceous, apical margin denticulate. **Inflorescence** apical, racemose, erect, flowering only once, distichous, secund; peduncle terete, thin, straight, short; rachis straight. **Floral bracts** nearly twice as long as the ovary, lanceolate, acuminate, coriaceous, the apical ones gradually shorter. **Flowers** 10-19, simultaneous, though some apical buds still present when the rest are open, non-resupinate, secund, fleshy, rigid, yellow, yellowish brown to greenish yellow; sweet nocturnal fragrance. **Ovary** short, thin, smooth, the ribs prominent. **Sepals** free, spreading, ovate-oblong, acute, 3-veined, margin entire; the laterals slightly oblique. **Petals** free, spreading, linear, subacute, 1-veined, margin entire. **Lip** united to the column, entire, widely ovate-cordiform, base cordate, apex subacute, conduplicate in natural position, without embracing the apex of the column, margin entire. **Column** thick, straight, the apex lightly arched upwards. **Clinandrium-hood** short, entire. **Anther** obovoid, 4-celled. **Pollinia** 4, obovoid, subequal, laterally compressed; caudicles soft and granulose, as long as the pollinia. **Rostellum** subapical, slit. **Nectary** without penetrating the ovary, pubescent. **Capsule** ellipsoid, with a thin pedicel and a very short apical neck.

OTHER SPECIMENS: COSTA RICA: Alajuela: Volcán Viejo, San Carlos, 1800-2000 m, 11-14 II 1986, *Gómez_Laurito 11013*, CR! F! USJ! **San José:** Cerro Zurquí, at river toward La Hondura, 1600 m, *Horich s.n.* MO! Parque Nacional Braulio Carrillo, 1650 m, 9 IX 1993, *Ramírez 101*, AMO! La Hondura de San José, 1300 m, 15 VIII 1933, *Valerio 816*, F! La Palma, 1500 m, 1 VII 1939, *Valerio 2721*, AMES! Tarrazú, Faja Costeña del Valle de Parrita San Marcos, 1400 m, *Morales 3744*, MO! **Cartago:** Tapantí, ca. 1500 m, 26 X 1992, *Atwood 4146*, USJ! Reserva Tapantí, ca. del Río Dos Amigos, 1300 m, 26 XI 1984, *Dressler 188*, USJ! Río Grande de Orosí to Río Humo, Cordillera de Talamanca, 1600-1900 m, 11 VIII 1984, *Grayum 3745*, MO! Valle del Reventazón, unión del Río Grande de Orosí y Dos Amigos, 1480 m, 19 VII 1994, *Lépiz 477*, INB! MO! Orosí, Parque Nacional Tapantí, 8 IX 1993, *Mora s.n.*, USJ x2! Cuenca del Reventazón, carretera a Tuasito, 1300-1650 m, 9 XI 2003, *Morales 10083*, INB! Orosí, Parque Nacional Tapantí, 1400 m, 6 X 1995, *Quesada 143*, USJ! **Heredia:** Zurquí, 1600 m, *Boyle 523*, USJ x2! Heredia, 1933, *Brenes s.n.*, NY! Braulio Carrillo Nat. Park, 1650-1700 m, 18 IX 1990, *Ingram 523*, AMO! (Illustration voucher) F!

OTHER RECORDS: COSTA RICA: Heredia: Cerro Gallito, col. L. D. Gómez, illustration by *R. Lucas Rodríguez 676*, 14 V 1969, slide and xerox, AMO! **Cartago:** Tapantí, 1900 m, *Mora Retana s.n.*, spirit, AMO!

DISTRIBUTION AND ECOLOGY: Endemic to central Costa Rica, on the Cordillera Central, terrestrial at 1300-2000 m altitude. Flowering from July to February.

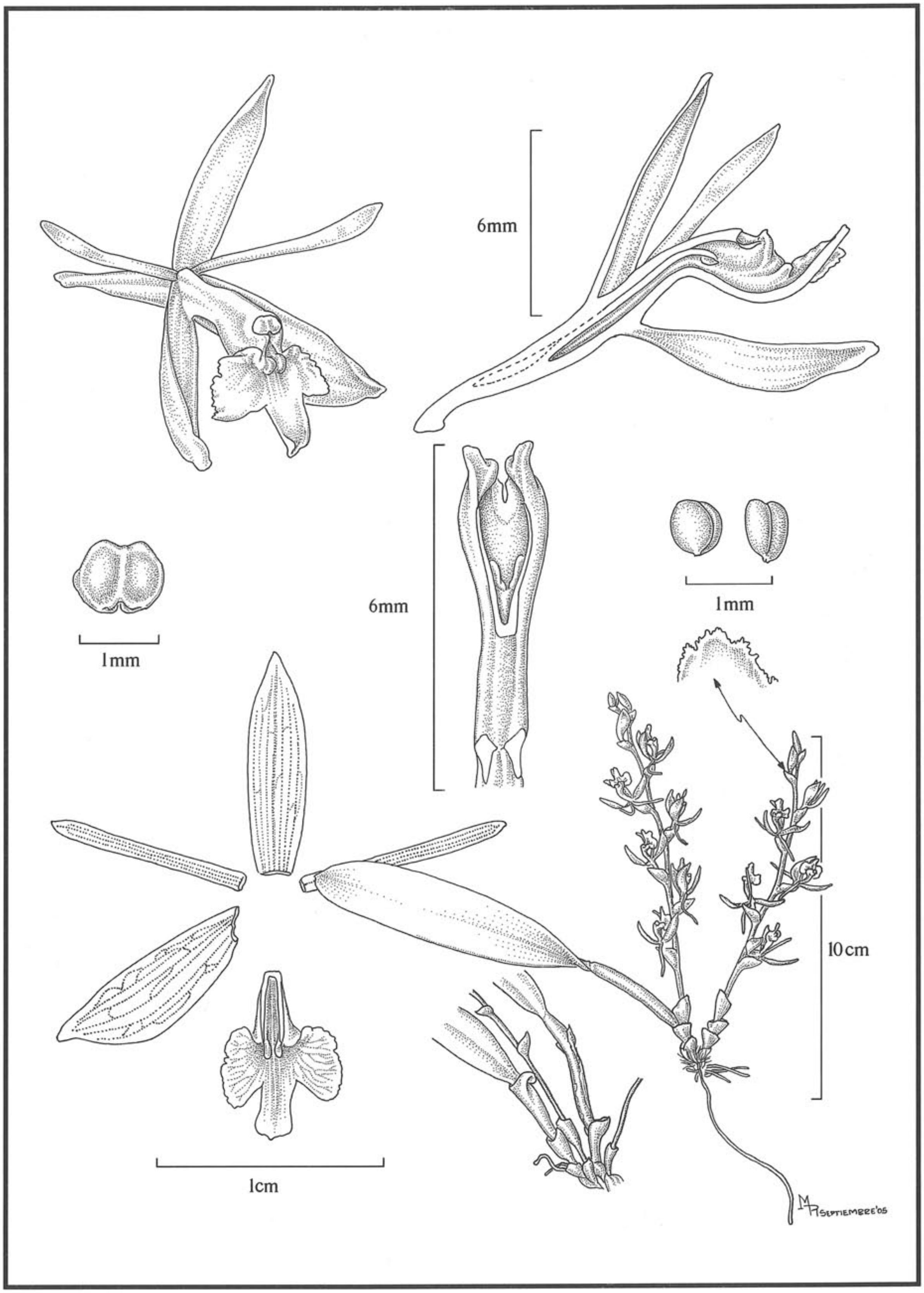
RECOGNITION: *Epidendrum rigidiflorum* belongs to the Macrostachyum Group , which is characterized by the monopodial plants with subapical branching, rugose leaf sheaths, racemose inflorescence, and fleshy flowers with a simple, conduplicate lip embracing the column, and the Aquaticum Subgroup which has a distichous inflorescence with secund, non-resupinate flowers, the lip entire, triangular to cordiform, and the nectary pubescent in front of the stigmatic cavity. The species is recognized by the large, scarcely branching plants, the lanceolate leaves, [7.5] 9.0-18 cm long, distichous and secund inflorescence, 15-23 cm long, the large floral bracts 11-22 mm long and yellow, yellowish brown to greenish yellow, large flowers (sepals 10-12 mm long), and the lip widely ovate-cordiform the base cordate. It is closely related to *Epidendrum microrigidiflorum* Hágsater from Costa Rica and Panama, which is overall smaller, the leaves ovate-lanceolate, 1.6-8 cm long, small flowers, (sepals 7.0-7.8 mm long) and petals greenish-yellow with the lip orange, sometimes somewhat greenish, and the lip widely rhombic, the base widely cuneate. Both have been confused with the South American *Epidendrum macrostachyum* Lindl. which has similar flowers, but a racemose, cylindrical inflorescence.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the fleshy, rigid quality of the flowers.

Authors: E. Santiago & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM ROUSSEAUAE Schltr. **Plate 1175**

EPIDENDRUM ROUSSEAUAE Schltr., Beih. Bot. Centralbl. 36: 407, 1918.

Type: PANAMA: Arn Isthmus, ***Rousseau***. Holotype: B (destroyed). Lectotype* (here designated): sketch of flower published in Mansfeld, Repert. Spec. Nov. Regni Veg. Beih. 59(2): t. 59, no. 222. 1931.

Auliza rousseauae (Schltr.) Brieger, nom. Illeg. Orchideen (Schlechter), 3 ed. 1 (9 lieferung): 547. 1977.

Hierba epífita, simpodial, cespitosa, 9.5-18 cm de alto. **Raíces** basales, delgadas, 0.4-1.0 mm grosor. **Tallos** formando un seudobulbo ligeramente engrosado, largamente cilíndrico, delgado, verde, 3-5.5 x 0.3-0.7 cm (en ejemplares herborizados); cubiertos casi totalmente por una 1 o 2 vainas, escariosas y fibrosas, ca. 15-45 mm de largo. **Hoja** 1, en el ápice del seudobulbo, articulada, erecta, elíptica a oblongo elíptica, conduplicada en la base, obtusa y diminutamente bilobada en el ápice, con una quilla dorsal diminuta, coriácea, margen entero, extendido, 5.5-13.2 x 1.2-3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida de un seudobulbo rudimentario, simple, dísitica, florece una sola vez, dística, pauciflora, laxa, erecta, 5.5-13 cm de largo; pedúnculo lateralmente aplanado, algo ancipitoso, erecto, recto, corto, 2-4 cm de largo, provisto en la base de 3 brácteas, anchamente ovadas al extenderse, subagudas, amplexicaules, infundibuliformes, parcialmente imbricadas, margen apical diminutamente crenado, 5-10 mm de largo; raquis delgado, lateralmente aplanado. **Brácteas florales** prominentes, ligeramente más largas que el ovario, anchamente triangular ovadas, subagudas, abrazadoras, margen apical diminutamente crenado, 4-8 mm de largo. **Ovario** terete, delgado, engrosado en los 2/3 apicales, no ornamentado, 5-6 mm de largo. **Flores** 4-8, simultáneas, dísticas, resupinadas, carnosas, de color verde claro, más pálidas hacia el disco del labelo; sin datos de fragancia. **Sépalos** libres, elíptico lanceolados, agudos, 7-nervados, margen entero, extendido, 9-12 x 2.0-4.0 mm; el dorsal entreabierto; los laterales porrectos, oblicuos. **Pétalos extendidos**, libres, lineares, el ápice algo ensanchado, subagudos, 3-nervados, margen entero, extendido, 8-11 x 0.8-1.5 mm. **Labelo** unido a la **columna**, 3-lobado, extendido, cordado en la base, 5-8 x 5.3-9.0 mm; bicalloso, los callos lateralmente aplanados, paralelos; disco provisto de 3 **quillas**, bajas e incipientes cuyo ápice forma una sola quilla ancha y carnosa que se desvanece en el ápice de la lámina; lóbulos laterales dolabriformes, margen eroso crenado, 2-3.2 x 3.3-4 mm; lóbulo medio oblongo en la base, suborbicular en el ápice, obtuso, diminutamente apiculado, margen entero, 2.5-3 x 2-3 mm. **Columna** arqueada, delgada, con un par de dientes apicales redondeados, 6-8 mm de largo. **Clinandrio** reducido, margen entero. **Antera** 4-locular, reniforme. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, muy cortas. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** pequeños, ocupando ¼ de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, no inflado, no ornamentado. **Cápsula** no vista.

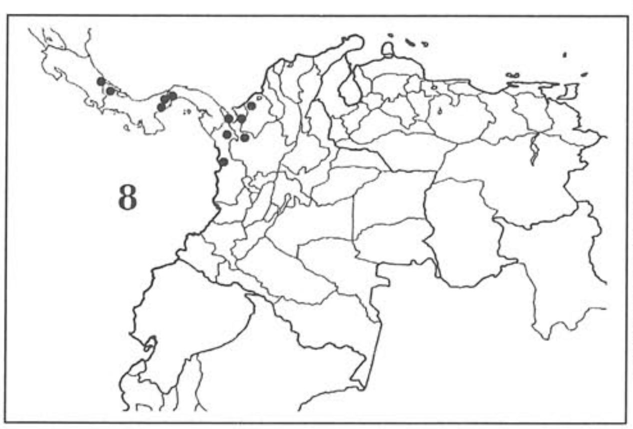
Epiphytic, sympodial, caespitose **herb. Roots** basal, thin. **Stems** forming a slightly thickened pseudobulb, long, cylinder-like, thin, green, covered nearly totally by 1-2 scarious, fibrous sheaths, one-leaved. **Leaf** single, apical, articulate, erect, elliptic to oblong-elliptic, base conduplicate, apex obtuse, minutely bilobed, with a minute dorsal keel, coriaceous, margin entire, spreading. **Inflorescence** apical, from a rudimentary pseudobulb, simple, distichous, flowering only once, few, lax-flowered, erect; peduncle laterally compressed, somewhat ancipitose, erect, straight, short, provided at the base with 3 bracts, widely ovate when spread, subacute, amplexicaul, infundibuliform, somewhat imbricating, apical margin minutely crenate; rachis thin, laterally compressed. **Floral bracts** prominent, slightly longer than the ovary, widely triangular-ovate, subacute, apical margin minutely crenate. **Ovary** terete, thin, thickened along the apical 2/3, smooth. **Flowers** 4-8, simultaneous, distichous, resupinate, fleshy, light green, becoming pale towards the disc of the lip. **Sepals** free, elliptic-lanceolate, acute, 7-veined, margin entire, spreading, the dorsal sepal partly spreading, the lateral sepals porrect, oblique. **Petals** spreading, free, linear, somewhat widened towards the apex, subacute, 3-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, spreading, base cordate; bicallose, the calli laterally compressed, parallel; disc provided with 3, low, keels, forming a single, widened, fleshy keel towards the apex, where it disappears; lateral lobes dolabriform, margin erose-crenate; midlobe oblong at the base, suborbicular at the apex, obtuse, minutely apiculate, margin entire. **Column** arching, thin, with a pair of rounded apical teeth. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, reniform. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, very short. **Rostellum** subapical, slit. **Nectary** penetrating 1/3 of the ovary, not inflated, smooth.

OTHER SPECIMENS: Without locality data, Hort. at Missouri Botanical Garden, MBG-67-73-138, *D'Arcy 7195*, K! **COSTA RICA:** Cult. en San José (jardín de la Sra. Vda. de Zeledón), 12 XI 1936, *Brenes 368*, AMES! **Limón:** Reserva Biológica Hitoy-cerere, Valle de Estrella, 300 m, 25 XI 1978, *Todzia 552*, CR! **PANAMA:** Without locality data, *Rundom 3*, AMES! **Chiriquí:** Valley of the upper Rio Chiriquí Viejo, vicinity of Monte Lirio, 1300-1900 m, 27 VI 1935, *Seibert 286*, MO! **Coclé:** North rim of El Valle, 9 VII 1939, *Allen 1894*, AMES! MO! **Panamá:** Fld. Prop. House, 20 X 1909, Without collector, *27164*, NY! Cerro Campana, 3000 ft, VI 1953, *Cope 15*, AMES! Cerro Campana, 10 VII 1968, *Dressler 3537*, Herb. Dressler! Along headwaters of Río Corso (off Río Pacora), ca. 500 m, 9 VI 1967, *Duke 11942(1)*, MO! East of City, sea level, XI 1920, *Powell 112*, AMES x3! MO! Ibid. Hort. Powell 112, VI 1923, *Powell 3393*, AMES! (Illustración voucher) Barro Colorado Island, Canal Zone, Fairchild trail, *Shattuck 347*, AMES! F! MO! **COLOMBIA:** Whithout locality data, *Fleuren sub OIC 8103*, SEL 52960! **Antioquia:** Camp on Quebrada Guinea, 50 km S of Turbó, 80 m, 21 IV 1945, *Haught 4581*, US! Mutatá, *Ortíz Valdivieso 862*, HPUJ! **Chocó:** Río Truandó, 40-200 m, 15 VI 1967, *Duke 12257(1)*, NY!

OTHER RECORDS: COSTA RICA: Without locality data, flowered in cultivation at Jardín Botánico Lankester, photographed 2 XII 2003, color photo, in F. Pupulin, 2005, Vanishing Beauty: Native Costa Rican Orchids 1: 298, San José, C.R., Editorial de la Universidad de Costa Rica. Red Marsh, hort. *Kennedy 2152*, slide, AMO! **PANAMA: Bocas del Toro:** Hill slope at Boca Chica creek, 5.8 km SE of the community Charco La Pava, 550 m, 23 X 2007, *Laube 572*, digital image, AMO! **COLOMBIA:** Without locality data, *Escobar s.n.*, slide, AMO! **Antioquia:** Urabá, ca. 800 m, *Duke 1276*, color photo and notes, AMO! Turbó, Río Mutatá, *Escobar 587*, AMES! Mutatá, *Ortíz Valdivieso 862*, xerox copy of illustration, AMO! **Chocó:** Bahía Solano, Misas 44, xerox copy of illustration, AMO! **Valle del Cauca:** below Queremal, 1320 m, 24 April 1983, *Hágsater 7347*, collector's notes, AMO, no specimen preserved.

DISTRIBUTION AND ECOLOGY: Known from eastern Costa Rica, Panamá and western Colombia, epiphytic, from sea level to 900 [1300-1900] m altitude, epiphyte. Flowering from June to November.

RECOGNITION: *Epidendrum rousseauae* belongs to the Laterale Group which is characterized by the sympodial, caespitose plants with fusiform, 1-leaved pseudobulbs, and a simple, distichous, apical inflorescence, from a rudimentary pseudobulb, the flowers, fleshy, pale green. The species is recognized by the 4-8 flowers, elliptic-lanceolate sepals 9-12 mm long, petals linear, 8-11 mm long, the midlobe of the lip with the base oblong and the apex gradually dilated, the column arching with a pair of rounded apical teeth, and the short ovary 5-6 mm long. *Epidendrum laterale* Rolfe is vegetatively very similar, the floral segments are larger, sepals elliptic, 15 mm long, petals linear-oblanceolate, 14 mm long, and mid-lobe cuneate at the base, and widened towards the apex; the ovary is 10 mm long.



CONSERVATION STATUS: DD. Data deficient.

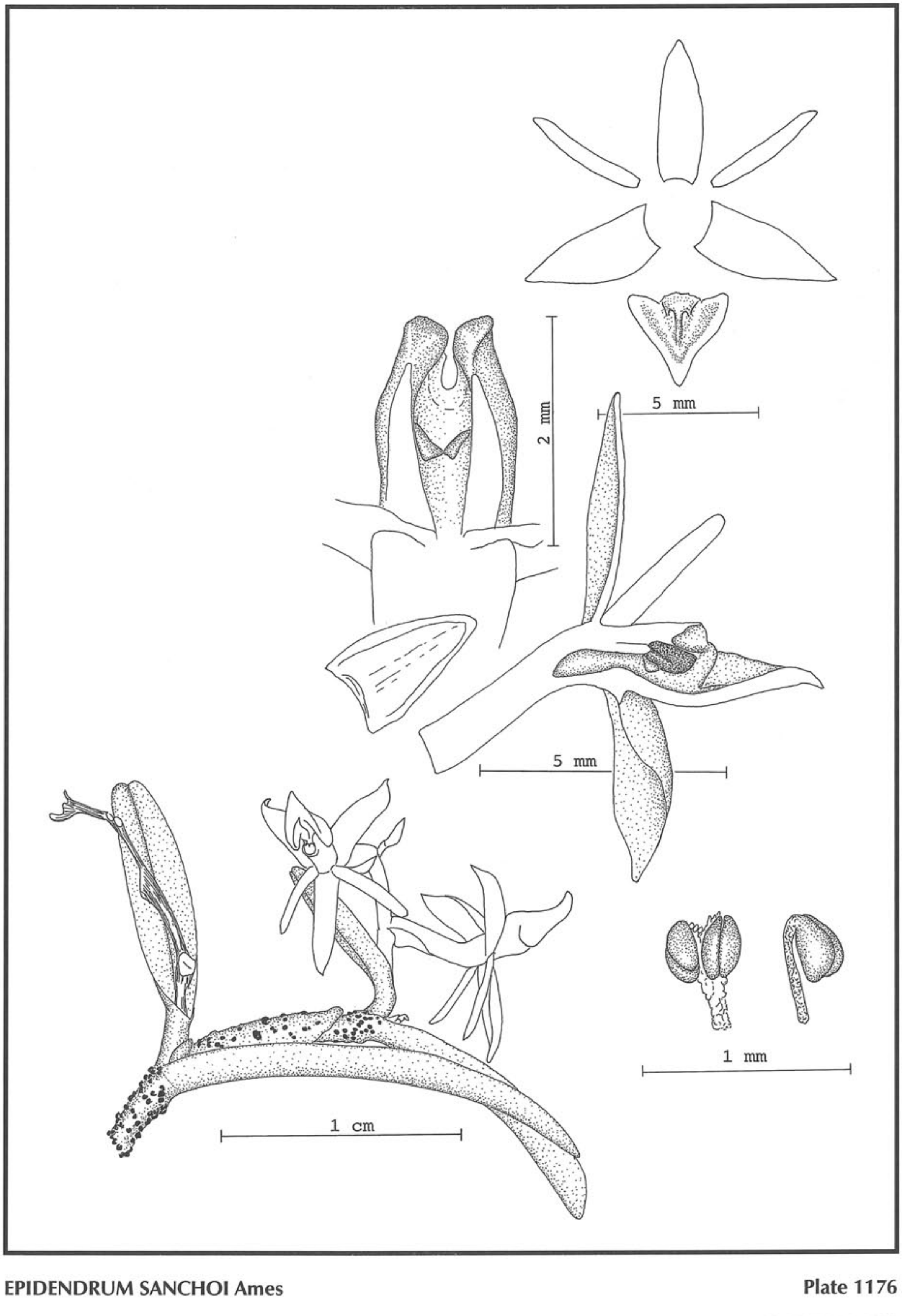
ETYMOLOGY: In honor of Mrs. Rousseau of Panama City, who supplied the material for the original description.

***NOTE:** The Vienna Code, (Art. 37.4) does not permit the use of illustrations as type of a name of a new species after 1 January 2007. However this lectotipification refers to a previously validly published new species, so the limitation of the code does not apply.

REFERENCES: Ames, O., 1923, *New or noteworthy orchids from Central America and Philippine Islands*, **Schedul. Orchid.** 3: 19; Ames, O., 1923, *New or noteworthy orchids from Central America and Philippine Islands*, **Schedul. Orchid.** 5: 29; Dressler, R. L., 1993, **Field guide to the Orchids of Costa Rica and Panama,** Cornell University Press, p. 90. Plate 5(6); Garay L. A., 1970, *Orquídeas Colombianas nuevas o criticas,* **Orquideología** 5(2): 81; Hágsater, E., 2005, *Epidendrum* in F. Pupulin, **Vanishing Beauty: Native Costa Rican Orchids** 1: 298, San José C.R. Editorial de la Universidad de Costa Rica; Misas, G., 2005, **Orquídeas de la Serranía del Baudó, Chocó-Colombia,** Corporación Capitalina de Orquideología, Bogotá, Colombia, p. 214.

Authors: E. Santiago & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**

Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM SANCHOI Ames **Plate 1176**

EPIDENDRUM SANCHOI Ames, Sched. Orchid. 4: 48. 1923.

Type: COSTA RICA: Near Cartago, ***Charles H. Lankester & Alfredo Sancho 384.*** Holotype: AMES 23158! Drawing of flower from type, AMES 26877!

Hierba epífita, monopodial, ramificada, 20-50 cm de alto. **Raíces** de la base del tallo principal, filiformes, 0.5-1 mm de grosor. **Tallos** ramificados, tipo caña, teretes, cubiertos por vainas rugosas, el principal de 15-45 x 0.18-0.25 cm; los tallos secundarios más cortos, 3-8 x 0.07-0.15 cm. **Hojas** 3-4, en el tercio apical de los tallos, vainas foliares tubulares, rugosas, 0.5-2.5 cm de largo; vaina foliar linear elípticas, oblicuamente bilobadas, coriáceas, margen entero, extendido, 0.8-6.5 x 0.2-0.6 cm. **Inflorescencia** apical del tallo principal y de las ramas, racemosa, dística, laxa; pedúnculo muy corto, terete, 1.0-1.5 mm de largo, el raquis flexuoso. **Brácteas florales** abrazadoras, más cortas que los ovarios, ovadas, obtusas, 4-4.5 mm de largo. **Flores** 1-5 (generalmente 3), simultáneas, el labelo siempre orientado hacia la raquis, blancas a blanco verdosas, fragancia no registrada. **Ovario** terete, no inflado, no ornamentado, 2.5-3.5 mm de largo. **Sépalos** extendidos, libres, lanceolados, agudos, con una quilla apical prominente, 5-nervados, glabros, margen entero, revoluto, 5-8 x 2-2.5 mm; los laterales oblicuos. **Pétalos** glabros, libres, extendidos, lineares, agudos, 3-nervados, margen entero, extendido, 4.5-6 x 0.75-1 mm. **Labelo** unido a la columna, entero, triangular, acuminado, base cordada, ángulos basales redondeados, el tercio apical más engrosado, 4-5 x 2-3.5 mm; callo tridentado, el central más largo que los laterales. **Columna** recta, 1.7-2 mm de largo. **Clinandrio** reducido, entero. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios. **Lóbulos laterales del estigma** prominentes, de 1/2 de la cavidad estigmática. **Nectario** penetrando 1/4 del ovario, no ornamentado. **Cápsula** no vista.

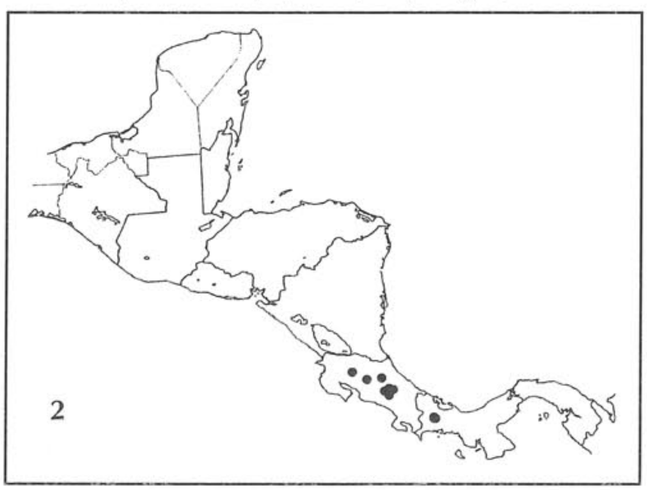
Epiphytic, monopodial, branching **herb. Roots** from the base of the main stem, filiform. **Stems** branching, cane-like, terete, covered by rugose sheaths, the main stem tall, the secondary stems short. **Leaves** many on the main stem, 3-4 distributed along the apical third of the branches; sheaths tubular, rugose; blade linear-elliptic, coriaceous, obliquely bilobed, margin entire, spreading. **Inflorescence** apical on the main stem and branches, racemose, distichous, lax-flowered; peduncle very short, terete, rachis flexuous. **Floral bracts** shorter than the ovary, ovate, obtuse. **Flowers** 1-5 (generally 3), simultaneous, the lip always facing the rachis, white to greenish white. **Ovary** terete, not inflated, smooth. **Sepals** spreading, free, lanceolate, acute, with a prominent dorsal keel, 5-veined, glabrous, margin entire, revolute; the lateral sepals oblique. **Petals** free, spreading, linear, acute, glabrous, 3-veined, margin entire, spreading. **Lip** united to the column, entire, triangular, acuminate, base cordate, basal angles rounded, the apical third thickened; callus tridentate, the central keel longer than the lateral keels. **Column** straight. **Clinandrium-hood** reduced, entire. **Anther** subsphaerical, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles soft and granulose, longer than the pollinia. **Nectary** penetrating 1/4th of the ovary, smooth.

OTHER SPECIMENS: COSTA RICA: Guanacaste: Desviación camino Santa Elena-Tilaran, hacia finca Hira Rosa, ca 2 km al E cerca de division continental, 28 XI 1984, *Hágsater 7086*, AMO! **Puntarenas:** El Carmen, Cerro Betsú, camino a Dúrika, ladera Pacífica, 2600 m, 6 X 1989, *Chacón 496*, INB! En propiedad de Mr. W. James, 1500 m, 18 X 1963, *Jiménez 1254*, AMES! CR! F! Monteverde, 1400-1700 m, 18 X 1978, *Todzia 485*, CR! **Alajuela:** Reserva Biológica Monteverde, 1600-1700 m, 6 XII 1989, *Atwood 4075*, F! La Hondura, 1300-1700 m, 16 III 1924, *Standley 37645*, US! Viento Fresco, 1600-1900 m, 13 II 1926, *Standley 47814*, AMES! **Heredia:** Cerros de Zurqui, northeast of San Isidro, 2000-2400 m, 3 III 1926, *Standley 50682*, AMES! **San José:** Entre San Jerónimo y Parque Braulio Carrillo, 13 X 1984, *Dressler 80*, USJ! Ibid. *Dressler 82*, USJ! Mountains east of San Jose, 10 XI 1960, *Palmer s.n.*, NY x3! La Hondura, 1300-1700 m, 16 III 1924, *Standley 37645*, AMES! La Hondura, 1200-1500 m, 9 III 1926, *Standley 51831*, AMES! US! San Cristobal road, 8000 ft [2448 m], 27 V 1928, *Stork 2242*, AMES! San Cristobal road, 6000 ft [1836 m], 14 VI 1928, *Stork 2551*, AMES! La Palma de San Jose, 1400-1500 m, 12 VIII 1979, *Todzia 683*, CR! **Cartago:** La Fuente, 1300 m, 29 VI 1926, *Alfaro 278*, AMES! US! Finca del Instituto, Turrialba, 600 m, 1 I 1947, *DeWolf 335*, CR! Village of Santa Cruz on Volcan Turrialba, *DeWolf 336*, AMES! Isla Bonita, Volcán Poas, 22 VII 1947, *DeWolf 470*, AMES! Vicinity of Quebrada Casa Blanca, Tapanti, ca. 1350 m, 30 IX 1984, *Grayum 3962*, AMO x2! CR! El Cañon Guarco, 12 III 1981, *Hágsater 6459*, AMO! (Illustration voucher, flowers in spirit) ENCB! MEXU! Rt. 2, Km 64, mas alla de la Cima, camino hacia el N, ca. 500 m, 2340 m, 22 VI 1988, *Hágsater 9507*, AMO! (Illustration, flowers in spirit). La Castilla, 16 XI 1966, *Lankester 1723*, SEL! Above Rio Grande de Orosi, 11 km al S of Tapanti, 1600 m, 27 VIII 1967, *Lent 1224*, CR! F! P.N. Tapantí, Valle de Reventazón. Entrada en Las Torres en el Río Humo, 1440 m, 21 VII 1994, *Lépiz 504*, F! INB! El Muñeco, on the rio Navarro, 1400-1500 m, 6 III 1926, *Standley 51758*, US! Ibid. *Standley 51761*, US! La Estrella, 16 V 1928, *Stork 1914*, AMES! La Chonta, 15 V 1928, *Stork 1925*, AMES! Ibid. *Stork 1926 A*, AMES! Tapantí, 1200 m, 18 X 1938, *Valerio 2672*, AMES! **PANAMÁ: Chiriquí:** Bajo Chorro, 6000 ft [1836 m], 13 I 1938, *Davidson 114*, AMES! F! Ibid. 28 II 1938, *Davidson 348*, F! San Ramón, headwaters of Río Caldera, ca. 2000 m, 22 X 1967, *Dressler 3116*, Herbario RLD!

OTHER RECORDS: COSTA RICA: Without locality, illustration by R. Lucas Rodríguez # 268. **Heredia:** Km 12, cerro de la Cruz, San Rafael de Heredia, Weston s.n., Illustration by R. Lucas Rodríguez # 546.

DISTRIBUTION AND ECOLOGY: Costa Rica and Panama; from the both sides of the the Continental Divide in the Cordillera Central, and Cordillera de Talamanca, epiphytic in cloud forest, from 1300 to 2100 m altitude. Flowering from September to November.

RECOGNITION: *Epidendrum sanchoi* Ames belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Rugosum Subgroup which has branching habit with few-flowered inflorescences from short, secondary stems, the leaf-sheaths rugose. The species can be recognized by the 1-5 flowered inflorescence, lanceolate sepals, linear petals, triangular, as wide as it is long, acuminate lip, the base cordate with rounded angles, tridentate callus, the central tooth longer. It is similar to *Epidendrum rugosum* Ames which has larger plants, a zigzag rachis, the lip proportionately longer, the base truncate, ecallose, the disc with 5 or more evident veins. *Epidendrum microcardium* Schltr. has smaller flowers (sepals 3.5-5.5 mm long), triangular-ovate lip, about as wide as it is long, ecallose, the margin very fleshy. It can also be confused with *Epidendrum platystomum* Hágsater & L.Sánchez and *Epidendrum platysomoides* Hágsater & L.Sánchez, but both of these species have small white flowers (sepals 2.5-3.1 mm long), the column with a tall, narrow aperture formed by the prominent, laminar wings of the column which form a funnel.



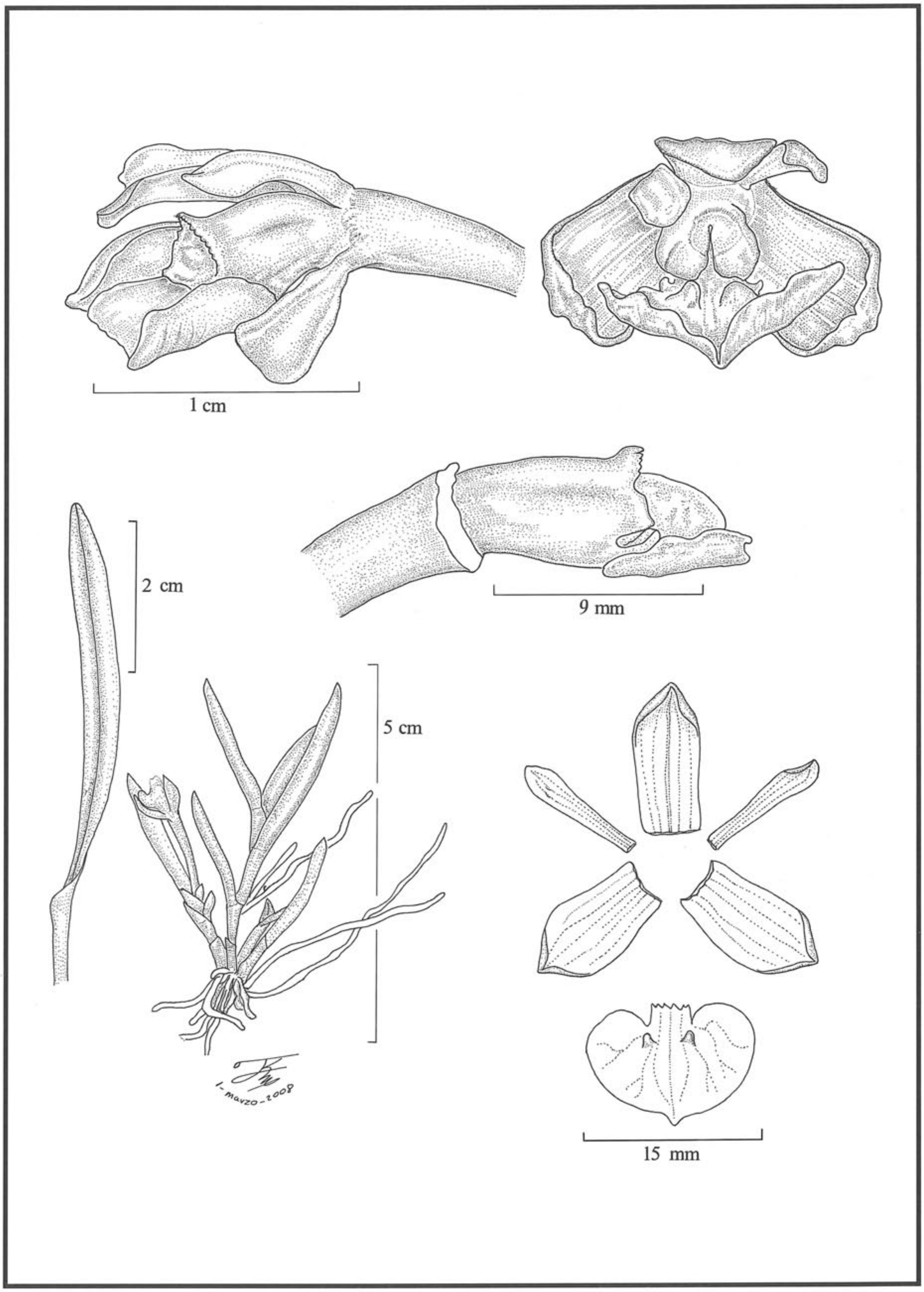
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CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Alfredo Sancho (1876-1929), a close friend and companion of Charles Lankester on his field trips. He introduced Lankester to the orchids of the regions where his brothers Mario, Francisco and Carlos Sancho worked.

REFERENCES: Ames, O., 1930. *Epidendrum Sanchoi*, Sched. Orchid. 10: 70. Hammel et al., 2003, **Manual de Plantas de Costa Rica**, Vol. III: 161, Missouri Botanical Garden.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM SCHISTOSTEMUM Hágsater, S.Laube & L.Sánchez **Plate 1177**

EPIDENDRUM SCHISTOSTEMUM Hágsater, S.Laube *et* L.Sánchez, *sp. nov.*

Type: PANAMA: Bocas del Toro: on a hill slope at Boca Chica creek (9°11'20"N; 82°32'13"W), 5.8 km south east of the community Charco La Pava at the Río Changuinola, 550 m, October 2007, ***Stefan Laube 563.*** Holotype: PMA! (Illustration voucher).

Epidendro gregorii Hágsater simile sed labello integro cordiformi, columna senibus lateralibus profundis, clinandrio integro margine dentato, discrepans.

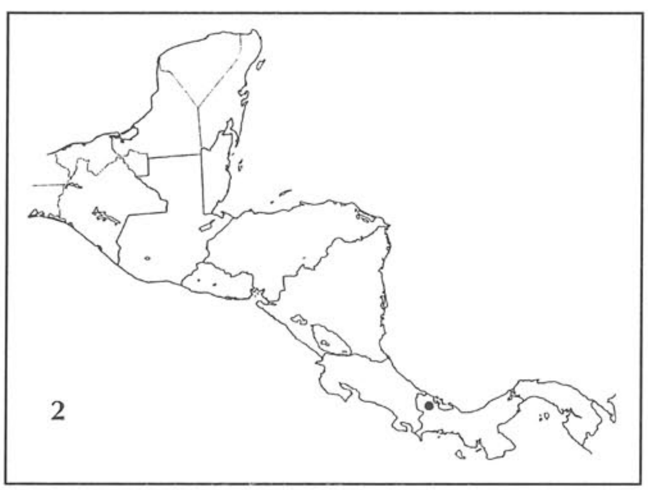
Hierba epífita, simpodial, cespitosa, 7-9.3 cm de alto incluyendo la inflorescencia. **Raíces** basales, filiformes, 1 mm de grosor. **Tallos** sencillos, tipo caña, teretes, recto, 2.5-4.0 x 0.1-0.2 cm. **Hojas** 2-4, distribuidas a lo largo del tallo, ascendentes; vaina foliar tubular, lisa; lámina conduplicada en la base, lanceolada, ápice obtuso, lisa, 2.5-5.0 x 0.3-0.5 cm. **Inflorescencia** apical, del tallo maduro, sésil, subcorymbosa. **Flores** 1-2, sucesivas, resupinadas, blancas, fragancia no registrada. **Bráctea floral** mucho más corta que el ovario, triangular, aguda, 1.5 mm de largo. **Ovario** no inflado, terete, no ornamentado, 18-20 x 0.3-0.4 mm. **Sépalos** entreabiertos, libres, obovados, membranáceos, glabros, 6-nervados, ápice agudo, margen entero, extendido; el dorsal 9.6 x 4.2 mm; los laterales con el ápice inflexo, 8.7-9.0 x 4.8-5.1 mm. **Pétalos** entreabiertos, oblanceolados, 3-nervados, membranáceos, ápice agudo, ligeramente inflexo, margen entero, extendido, 8.4-8.6 x 1.7-2.0 mm. **Labelo** unido a la columna, cordiforme, base cordada, ápice redondeado, margen entero, extendido, 9 x 8.3 mm; bicalloso, los callos subglobosos. **Columna** arqueada, con lobos laterales prominentes, obtusos, erosos y separado del labelo por senos basales profundos, 6.3 x 0.3 mm. **Clinandrio** prominente, entero, margen dentado. **Antera** obovoidea, 4-locular. **Polinios** no vistos. **Rostelo** no visto. **Lóbulos laterales del estigma** no vistos. **Nectario** no visto. **Cápsula** no vista.

Epiphytic, sympoidal, caespitose short **herb. Roots** basal, filiform, thin. **Stems** simple, cane-like, terete, straight. **Leaves** 2-4, distributed throughout the stem, ascending; foliar sheath tubular, smooth; blade conduplicate at the base, lanceolate, apex obtuse, smooth. **Inflorescence** apical, from the mature stem, sessile, subcorymbose. **Flowers** 1-2, successive, resupinate, white. **Floral bracts** much shorter than the ovary, triangular, acute. **Ovary** not inflated, terete, smooth. **Sepals** partly spreading, free, obovate, apex acute, membranaceous, glabrous, 6-veined, margin entire, spreading, the apex of the lateral sepals inflexed. **Petals** partly spreading, oblanceolate, 3-veined, membranaceous, apex acute, slightly inflexed, margin entire, spreading. **Lip** united to the column, cordiform, base cordate, apex rounded, margin entire, spreading; bicallose, the callus subglobose. **Column** arching, with prominent, obtuse, erose, lateral lobes separated from the lip by deep basal sinii. **Clinandrium-hood** prominent, entire, margin dentate. **Anther** obovoid, 4-celled.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Species known only from the type locality in western Panama, on the Atlantic slope. Flowering in October.

RECOGNITION: *Epidendrum schistostemum* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish green, rarely white flowers. The species can be recognized by its relatively short plants, terete stems, 1-2 white flowers, entire, widely cordiform lip, the column with prominent apical lateral, obtuse lobes, the margin erose, and separated from the lip by deep sinii, the clinandrium-hood entire, margin dentate. It is similar to *Epidendrum gregori* Hágsater which has 2-3 pale green flowers, a bilobed lip with a wide apical sinus and small oblique indentations on the distal margin; the column is blunt, not separated from the column by deep sinii, and the column-hood is split in three, the margin irregular-erose. *Epidendrum hammelii* Hágsater & L.Sánchez has larger flowers, the lanceolate sepals 35 mm long, a reniform lip, the disc thickened into 3 thick, short keels, the column is blunt without prominent lobes or sinii.

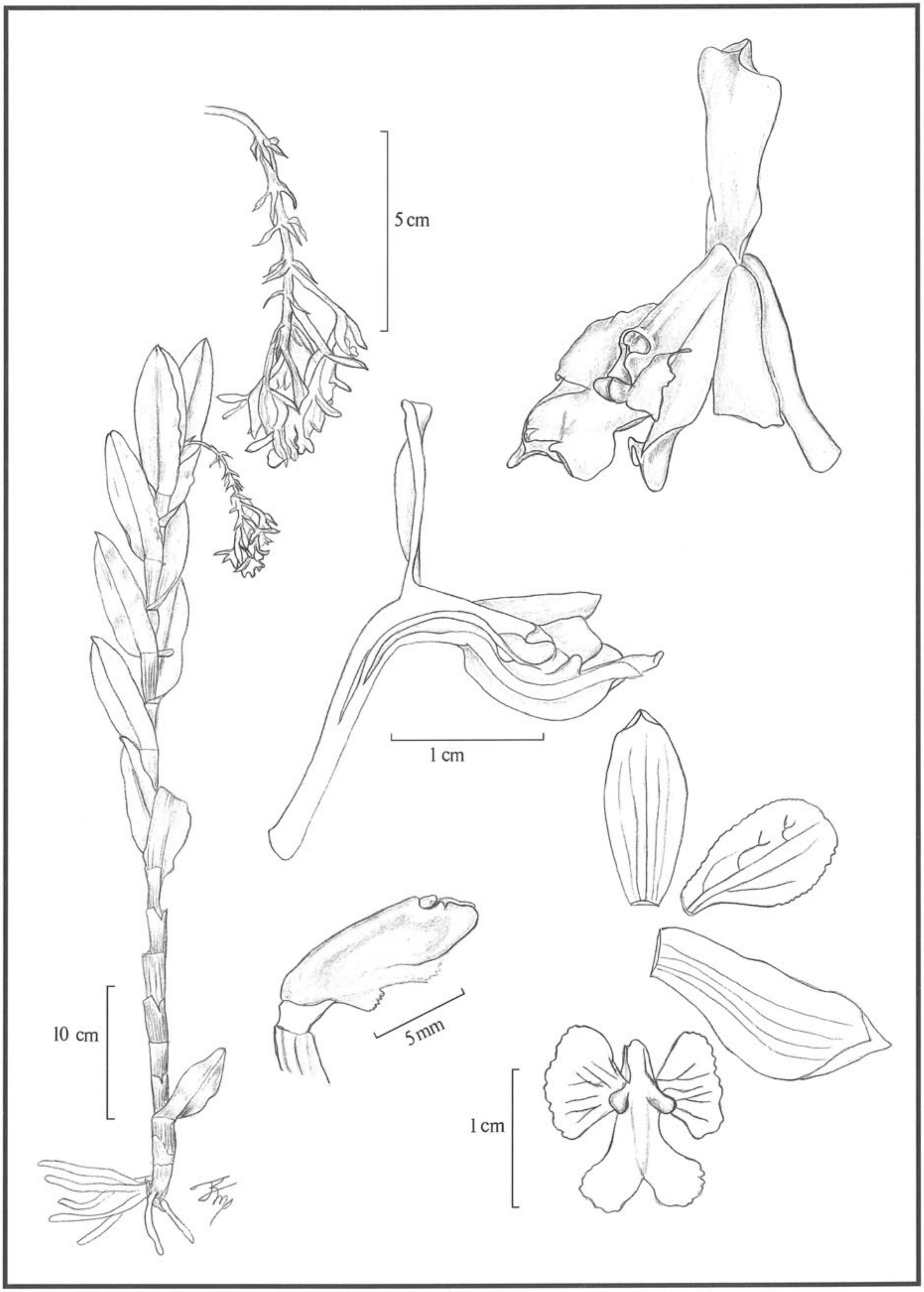


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek σχιστος, cleft, divided, and στημα, penis, stamen, in reference to the column which is deeply cleft on each side of the apex, a distinguishing feature from similar species.

REFERENCES: Hágsater, E. 1993. *Epidendrum gregori in* Hágsater, E., & G. A. Salazar. (eds.) **Icon. Orchid. (Mexico City)** 2. pl. 138. Hágsater, E. & L. Sánchez. 1993. *Epidendrum hammelii in* Hágsater, E., & G. A. Salazar. (eds.) **Icon. Orchid. (Mexico City)** 2. pl. 143.

Authors: E. Hágsater, S. Laube & L. Sánchez S. Illustrator: R. Jiménez M. based on Laube s Illustration Editors: E. Hágsater & L. Sánchez S.



EPIDENDRUM SIGSIGENSE Hágsater & Dodson **Plate 1178**

EPIDENDRUM SIGSIGENSE Hágsater et Dodson, *sp. nov.*

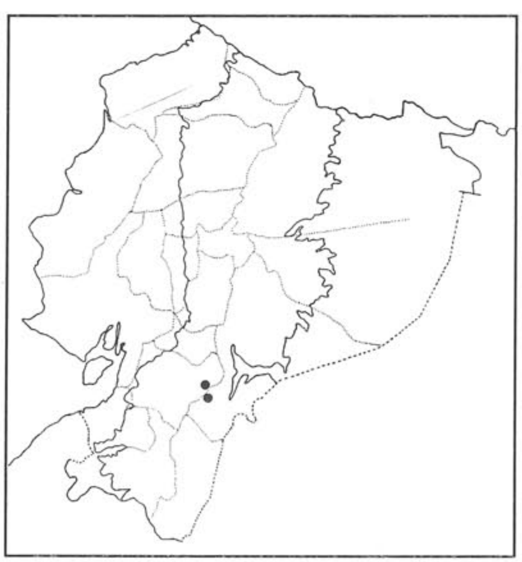
Type: ECUADOR: "Morona-Santiago"[Azuay]: terrestrial in steep road bank above Sigsig, 3000 m, 6 May 1981, ***J. & L. Kuhn* & *C. & J. Luer 53.*** Holotype: SEL! (Illustration voucher.)

Epidendro pastoënsi Schltr. simile sed petalis latioribus, labelli lobulo medio profunde emarginato non apiculato et cum isthmo brevi in duos lobulos subquadratos prominentes furcato, divergens.

Hierba terrestre, monopodial, de tallo erecto ramificado arriba, 80 cm de alto. **Raíces** solo de la base de la planta, carnosas, muy gruesas, blancas, 3-4.5 mm de grosor. **Tallos** ramificados arriba, tipo caña, teretes, rectos, el principal, 67 x 0.7-1.2 cm; las ramas 9.5-23 cm de largo. **Hojas** numerosas, distribuidas a todo lo largo del tallo, dísticas, subcoriáceas; vaina tubular, finamente rugosa, estriada, escariosa y algo fibrosa con el tiempo; 2-4.5 cm de largo; lámina elíptica, ápice bilobado, margen apical crenulado, 9-11 x 3-3.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, racemosa, arqueada, nutante, 13 cm de largo; pedúnculo terete, provisto en la parte medio de una bráctea ovado lanceolada, largamente acuminada, 14 mm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, acuminadas, 8-10 mm de largo. **Flores** ca. 22, simultáneas, resupinadas, carnosas, de color crema, sin datos de fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, 18-20 mm de largo. **Sépalos** carnosos, ápice obtuso, margen entero, extendido; el **dorsal** extendido, libre, elíptico obovado, 5-nervado, 14.5 x 6 mm; los **laterales** entreabiertos, unidos de manera oblicua a la parte basal de la columna, angostamente obovados, oblicuos, ápice aristado, 4-nervados, 18 x 7.5 mm. **Pétalos** entreabiertos, libres, obovados, ápice redondeado, 2-nervados, las nervaduras cortamente ramificadas, margen eroso, revoluto, 12.5 x 7.0 mm. **Labelo** unido a la columna, trilobado, profundamente cordado en la base, 14 x 13 mm; bicalloso, los callos laminares, disco provisto de una quilla intercallosa alargada hasta el seno apical; lóbulos laterales dolabriformes, margen crenado, 6 x 8 mm; lóbulo medio obcuneado, profundamente emarginado, formando dos lobos divergentes de márgenes apicales erosos, 7 x 9 mm. **Columna** recta, delgada, con un par de alas laterales redondeadas, prominentes, 10 mm de largo. **Clinandrio** reducido, margen entero. **Nectario** corto, penetrando 1/3 del ovario, no inflado, no ornamentado. **Cápsula** no vista.

Terrestrial, monopodial **herb**, stem erect, branching above. **Roots** from the base of the plant only, fleshy, very thick, white. **Stems** the main stem erect, cane-like, thick, tall, terete, straight, branching at the apex, the secondary stems shorter, thinner. **Leaves** numerous, distributed throughout the stems, distichous, subcoriaceous; sheaths tubular, minutely rugose, striated, scarious, becoming somewhat fibrous with time; blade elliptic, apex bilobed, apical margin crenulate. **Spathaceous bract** absent. **Inflorescence** apical, from the mature stem, flowering only once, racemose, arching, nutant; peduncle terete, provided in the middle with am ovate-lanceolate, long-acuminate bract. **Flora bracts** shorter than the ovary, narrowly triangular, acuminate. **Flowers** ca. 22, simultaneous, resupinate, fleshy, cream colored. **Ovary** terete, thin, not inflated, smooth. **Sepals** fleshy, apex obtuse, margin entire, spreading, the dorsal sepal spreading, free, elliptic-obovate, 5-veined; the lateral sepals partly spreading, obliquely united to the column, narrowly obovate, oblique, apex aristate, 4-veined. **Petals** partly spreading, free, obovate, apex rounded, 2-veined, the veins short-branched, margin erose, revolute. **Lip** united to the column, 3-lobed, base deeply cordate; bicallose, the calli laminar, disc provided with a keel in between the calli and elongate until a apical sinus; lateral lobes dolabriform, margin crenate; midlobe obcuneate, deeply emarginate, forming a pair of divergent lobes with the apical margins erose. **Column** straight, thin, with a pair of prominent, lateral, rounded wings. **Clinandrium-hood** reduced, margin entire. **Nectary** short, penetrating 1/3 of the ovary, not inflated, smooth.

OTHER SPECIMENS: ECUADOR: Morona-Santiago: Cuenca-Sigsig-Chigüinda, km 74, 2950 m, 27 VII 2000, *Alvarez 2769*, NY!

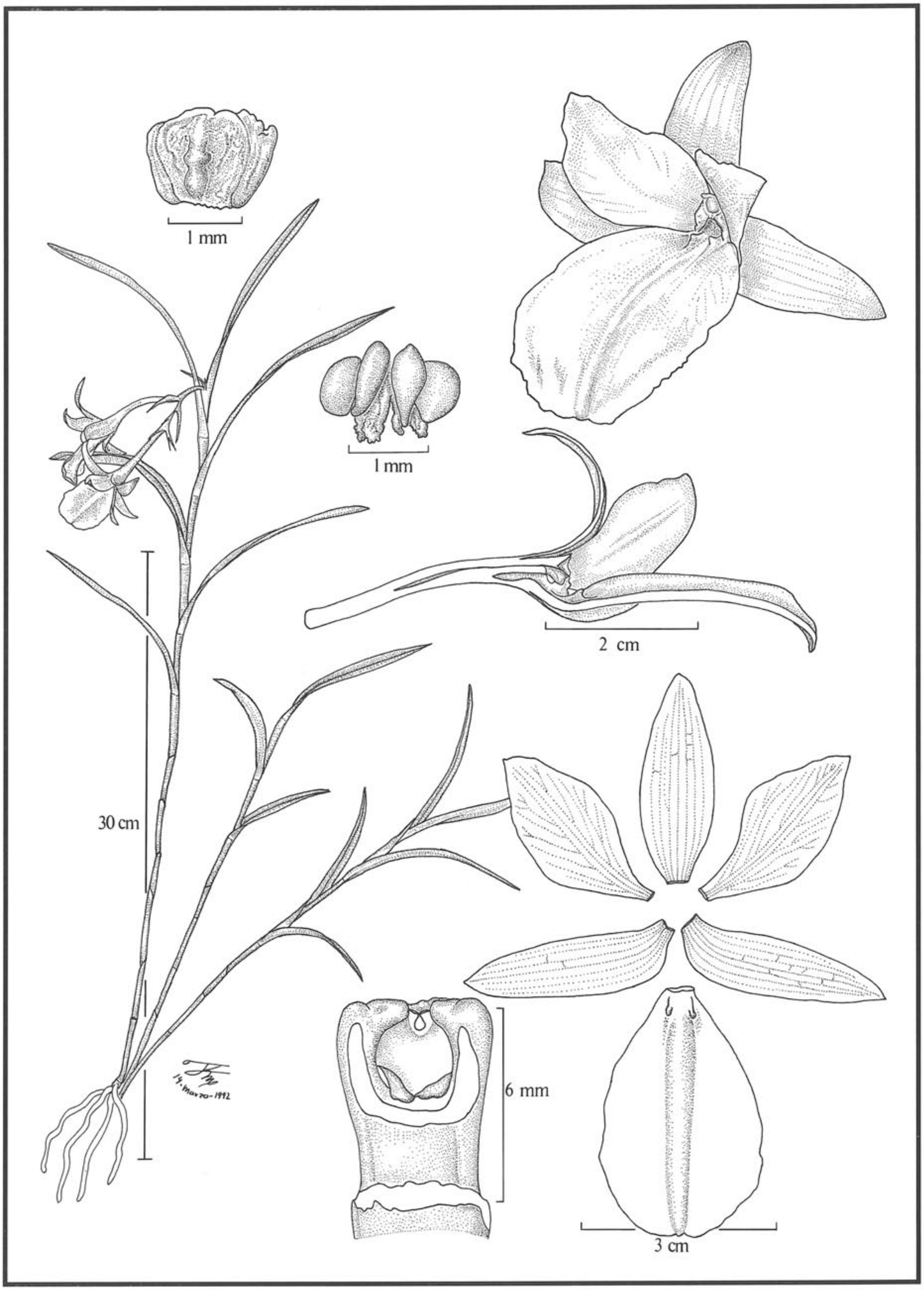


DISTRIBUTION AND ECOLOGY: Known only from steep road sides east of Cuenca, at 2900-3000 m altitude. Flowering from May to July.

RECOGNITION: *Epidendrum sigsigense* belongs to the Andean Group, and Cernuum Subgroup, characterized by the long, erect, cane-like stems with subapical branching, leaves oblong, subcoriaceous, with the apex obtuse and the 3-lobed lip and the prominent clinandrium funnel-shaped. The species is recognized by the apical lobe of the lip deeply cleft so as to be clearly bilobed, without any apicule in the sinus, the lateral lobes are not oblique and the wider petals with the margin clearly erose. *Epidendrum pastoënse* Schltr. has 10-14 mm long sepals, narrowly obovate petals, the midlobe of the lip emarginate, bluntly apiculate, the flowers very odorous.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the town of Sigsig, in the province of Azuay, near where the species has been collected.



EPIDENDRUM SOBRALIOIDES Ames & Correll **Plate 1179**

EPIDENDRUM SOBRALIOIDES Ames & Correll, Amer. Orchid Soc. Bull. 12: 60. 1943.

Type: GUATEMALA: Zacapa: Sierra de las Minas, between Loma El Picacho and Cerro de Monos, 2000-2600 m, 16 January 1942, ***Julián A. Steyermark 42764***. Holotype: AMES! Isotype: F!

Hierba epífita, simpodial, cespitosa, suberecta, 35-40 cm de alto. **Raíces** basales, carnosas, 3-4 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y algo lateralmente aplanados en el ápice, delgados, rectos, 35-40 x 0.25-0.5 cm; cubiertos en la mitad basal por vainas (no foliosas) tubulares, escariosas, 25-40 mm de largo. **Hojas** 5-7, distribuidas en la mitad apical del tallo, articuladas, dísticas, ascendentes; vaina tubular, 20-33 x 2.5-6 mm; lámina linear lanceolada, aguda, con un apículo diminuto, coriácea, de color verde a verde purpúreo, margen entero, extendido, 5.5-13.5 x 0.5-1 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueado nutante, pauciflora, corta, 2.5-3 cm de largo; pedúnculo muy corto, ca. 1 cm de largo. **Brácteas florales** prominentes, casi tan largas como el ovario, angostamente triangulares, largamente acuminadas, abrazadoras, 14-18 mm de largo. **Flores** 4-6, simultáneas, resupinadas, campaniformes, sépalos y pétalos pardo amarillentos a pardo verdosos, las nervaduras teñidas de pardo purpúreo, labelo amarillo a verdoso; sin datos de fragancia. **Ovario** subterete, delgado, no inflado, estriado, 15-32 mm de largo. **Sépalos** libres, entreabiertos, ligeramente recurvados, carnosos, subcoriáceos, dorsalmente apiculados, 7-nervados, margen entero, extendido, 30-34 x 8-9 mm; el **dorsal** lanceolado, obtuso; los **laterales** fuertemente divaricados, oblongo lanceolados, subagudos, oblicuos. **Pétalos** libres, entreabiertos, ovados, ungiculados en la base, agudos, 3-nervados, las nervaduras laterales ramificadas a todo lo largo, margen entero, extendido, 29-30 x 13.5-15 mm. **Labelo** unido a la columna, entero, obovado, cuneado en la base y ligeramente retuso en el ápice, con un apículo diminuto, margen crenado, ligeramente revoluto en la mitad apical, 30-35 x 20-21 mm; bicalloso, los callos cortos, laminares, delgados e incipientes, ubicados muy en la base del labelo ocultos debajo del ápice de la columna; disco unicarinado, la carina carnosa, engrosada, alargada hasta el seno apical de la lámina. **Columna** corta, recta, gruesa, 5-6 mm de largo. **Clinandrio** prominente (aunque sin sobrepasar el ápice de la columna), margen ligeramente crenulado. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides; caudículas suaves y granulosas de la misma longitud que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, ocupando ½ de la cavidad estigmática. **Nectario** poco profundo, apenas penetrando el ovario, no inflado, no ornamentado. **Cápsula** no vista.

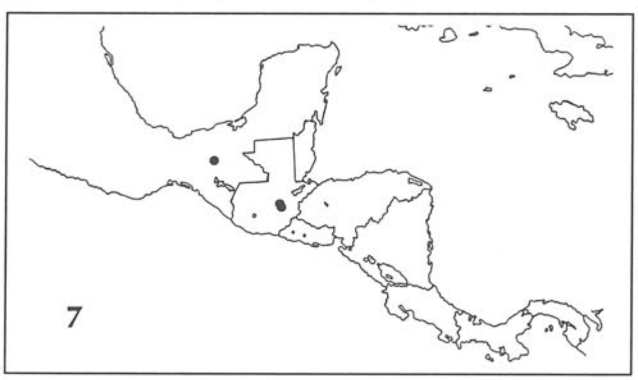
Epiphytic, sympodial, caespitose, suberect **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete at the base and somewhat laterally compressed at the apex, thin, straight; the basal half covered by non foliar, tubular, scarious sheaths. **Leaves** 5-7, distributed along the upper half of the stem, articulate, distichous, ascending; sheaths tubular; blade linear-lanceolate, acute, with a minute apicule, coriaceous, green to purple-green, margin entire, spreading. **Inflorescence** apical, flowering only once, racemose, arching-nutant, few-flowered, short; peduncle very short. **Floral bracts** prominent, nearly as long as the ovary, narrowly triangular, long-acuminate. **Flowers** 4-6, simultaneous, resupinate, bell-shaped, sepals and petals yellowish brown to greenish brown, the veins tinged with purple-brown, lip yellow to greenish. **Ovary** subterete, thin, not inflated, striated. **Sepals** free, partly spreading, slightly recurved, fleshy, subcoriaceous, dorsally apiculate, 7-veined, margin entire, spreading; the dorsal sepal lanceolate, obtuse, the lateral sepals strongly divaricate, oblong-lanceolate, subacute, oblique. **Petals** free, wider than the sepals, partly spreading, ovate, base unguiculate, acute, 3-veined, the lateral veins branching throughout, margin entire, spreading. **Lip** united to the column, entire, obovate, base cuneate, apex slightly retuse, with a minute apicule, margin crenate, slightly revolute along the apical half; bicallose, calli very short, laminar, thin, small, located at the very base of the lip, hidden beneath the apex of the column; disc single-keeled, the keel fleshy, reaching the middle of the lip. **Column** short, straight, thick. **Clinandrium-hood** prominent, but not surpassing the body of the column, margin slightly crenulate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, caudicles soft and granulose, as long as the pollinia. **Rostellum** apical, slit. **Nectary** shallow, barely penetrating the ovary, not inflated, smooth.

OTHER SPECIMENS: MÉXICO: Chiapas: Carretera Coapilla-Ocotepec, 1750 m, 17 I 1987, *Cabrera 35*, CHIP!

OTHER RECORDS: MÉXICO: Chiapas: Carretera Coapilla-Ocotepec, 1750 m, 17 I 1987, *Cabrera 35*, xerox and color photos, AMO! **GUATEMALA:** Without locality, hort. ex *Mittelsteadt sub Salazar 4452*, spirit and flower card, AMO! (Illustration voucher) Ibid. color photo by Hágsater, in M. Soto et al., 2007, Orchids of Mexico, Digital Catalogue: fig. 0408, México, Instituto Chinoín. Without locality, only indicated as Region 5 (Humid Region), 2000-2800 m, *Behar s.n.*, color photo published in Guatemala y sus Orquídeas, p. 142. **[Zacapa:]** Sierra de las Minas, Expo. Asociación Guatemalteca de Orquídeas, 2000 m, 8 IV 1982, *Dix 4970*, slide and spirit, AMO!

DISTRIBUTION AND ECOLOGY: Ranging from México [Chiapas] and Guatemala (Sierra de las Minas); epiphytic at 1750-2800 m altitude. Flowering January. [February to May, according to Behar, 2000].

RECOGNITION: *Epidendrum sobraloides* belongs to the Eximium Group which is characterized by the relatively small plants, to 40 cm tall, the sympodial, non-branching, few-leaved stems, the apical, generally racemose inflorescence always short, shorter than the apical leaf, the bell-shaped, showy, greenish yellow or green with brown or purple tinted flowers, the lip entire, and very small calli. The species is recognized by the linear-lanceolate, acute leaves (5-10 mm wide), the concolor, yellow lip, the partly spreading, 29-34 mm long sepals and petals with the apex recurved, and the obovate lip with the margins spreading, not embracing the column. *Epidendrum eximium* L.O. Williams has lanceolate to elliptic, 10-30 mm wide leaves, 18-25 mm long sepals and petals, partly spreading, the apex straight, and the lip tinged with reddish-purple, suborbicular ovate, with the base embracing the apex of the column. *Epidendrum warszewiczii* Rchb.f. also has linear-lanceolate leaves but the apex is obtuse and bilobed, the flowers probably pale reddish-purple, the sepals and petals nearly closed with the apex recurved, about 32 mm long, and the lip slightly 3-lobed but obovate in general outline, with the margin denticulate.



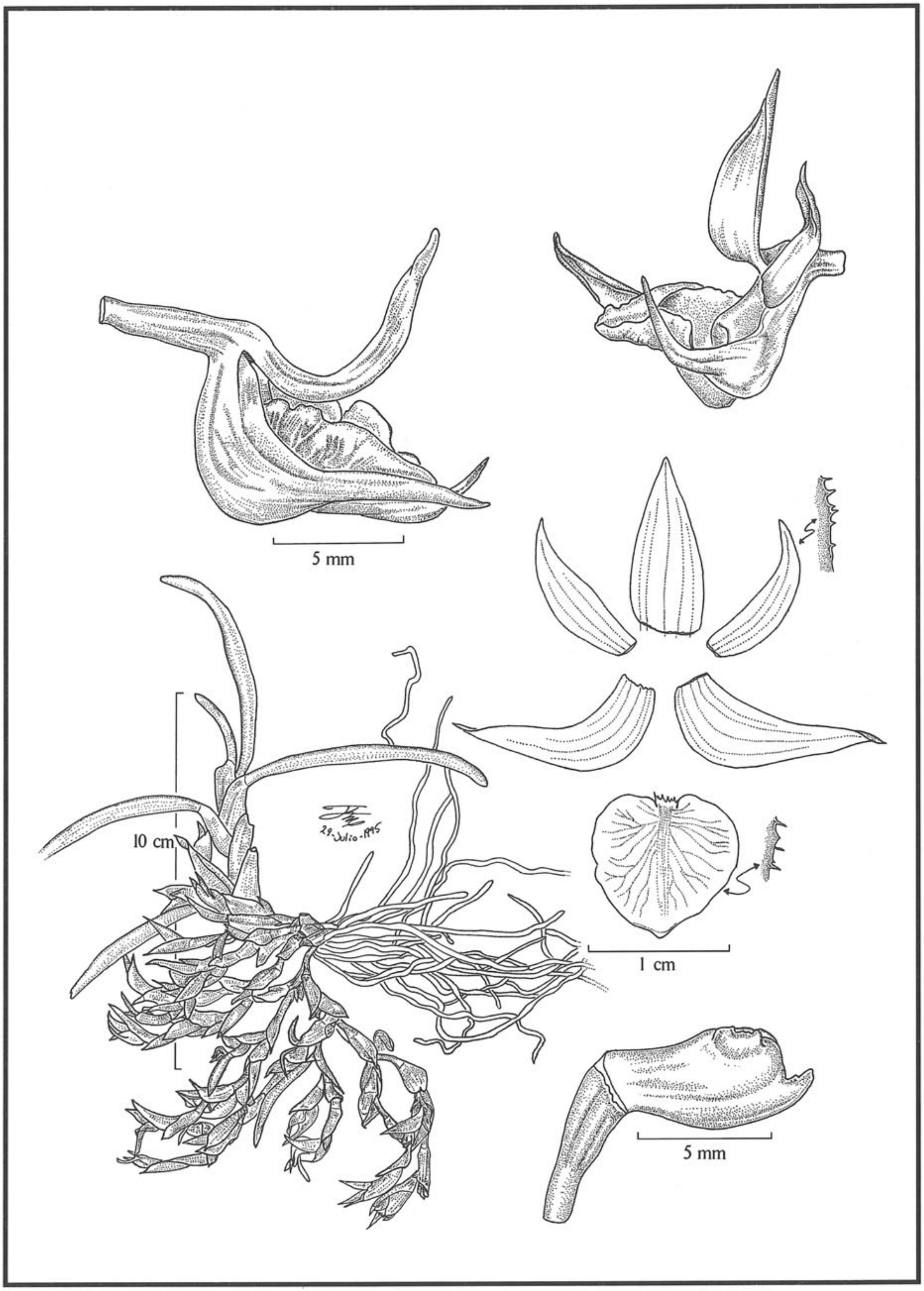
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CONSERVATION STATUS: DD. Data deficient. An apparently rare species throughout its range.

ETYMOLOGY: In reference to the superficial similarity of the flower to those of the genus *Sobralia*.

REFERENCES: Ames, O. and D.S. Correll, 1953, **Orchids of Guatemala. Fieldiana, Bot.** 26: 378-380, fig. 104; Behar, M. and O. Tinschert, 2000, **Guatemala y sus *Orquídeas*,** p. 142; Soto, M. et al., 2007, **Orchids of Mexico**, Digital Catalogue: figs. 0408, México, Instituto Chinoín.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM SOPHRONITOIDES F.Lehm. & Kraenzl. **Plate 1180**

EPIDENDRUM SOPHRONITOIDES F.Lehm. & Kraenzl., Bot. Jahrb. Syst. 23: 464. 1899.

Type: COLOMBIA: [Cauca:] Forest above Inzá, 3000-3200 m, ***F. C. Lehmann 6245.*** Lectotype here designated: K-L!*, (mounted on same sheet with *F. C. Lehmann 6375*). Isolectotypes K-L! (mounted singly). LE!

Synonyms: *Takulumena sophronitoides* (F.Lehm. & Kraenzl.) Szlach., Orchidee (Hamburg) 57(3): 326. 2006. *Epidendrum monanthum* Schltr., Repert. Spec. Nov. Regni Veg. 14: 391. 1916. Type: ECUADOR: Chimborazo: in silvis tropicis vulcani Pallatanga, blühend im September 1871, ***A. Sodiro 100 bis***. Holotype: B, destroyed. Isotypes: BR! P! (Illustration voucher.) Non *Epidendrum monanthum Steud.* (1840)=*Prosthechea pygmaea* (Hooker) W.E. Higgins.

Hierba epífita, monopodial, 3-4 cm de alto. **Raíces** basales, carnosas, 1-2 mm grosor. **Tallo** sencillo, erecto, lateralmente aplanado, completamente cubierto por las vainas foliares, ocasionalmente se produce un tallo adicional de cerca de la base pero arriba de las inflorescencias, 2-4 cm de largo. **Hojas** 7-12, distribuidas a lo largo del tallo, dísticas en un solo plano, imbricadas, articuladas; vainas tubulares, finamente estriadas, 7-16 mm de largo; lámina linear a linear lanceolada, obtusa, diminutamente apiculada, rugosa, conduplicada y arqueada en posición natural, coriácea, verde oscuro, margen entero, papiloso, 5.7-7.5 x 0.6-0.9 cm. **Bráctea espatácea** ausente. **Inflorescencias** laterales, producidas de cerca de la base del tallo, rastreras, colgantes, florecen durante varios años, 5-9 cm de largo; completamente cubiertas por brácteas, de segmentos sucesivos, ramificados; cada segmento de varios entrenudos, cada nudo con una bráctea ovada, en ocasiones tubular en la base, aguda a cortamente acuminada, estriada, escariosa, 7-12 mm de largo; el nuevo segmento se produce de la parte superior del último entrenudo; en ocasiones en plantas muy viejas puede producir keikis de las partes más alejadas de las inflorescencias. **Brácteas florales** semejantes a las del escapo, más largas que el ovario, tubulares, acuminadas, 9-14 mm de largo. **Flores** solitarias, se produce una sola en cada segmento, no resupinadas, de color amarillo verdoso a pardo verdoso; sin fragancia. **Ovario** terete, delgado, no inflado, no ornamentado, 3-5 mm de largo. **Sépalos** entreabiertos, libres, carnosos, glabros, acuminados, 5-nervados, márgenes enteros, extendidos; el dorsal triangular ovado, 10-14 x 3-5 mm; los laterales oblicuamente oblongos a triangulares, falcados, 12-16 x 4.5-6 mm. **Pétalos** extendidos, libres, angostamente lanceolados, ápice cortamente acuminado, 3-nervados, glabros, márgenes ciliados, extendidos, 10-11.5 x 2.8-3.3 mm. **Labelo** unido a la columna, ovado-cordiforme, base ligeramente cordada, obtuso en el ápice, margen extendido, ciliado; los lados erectos abrazando el ápice de la columna, sin envolverla por completo; ecalloso, con una carina baja y roma que se desvanece en el ápice de la lámina; 8.5-10 x 10-10.5 mm. **Columna** corta, gruesa, recta, 5-6 mm de largo. **Clinandrio** reducido, margen denticulado. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando la mitad de la cavidad estigmática. **Nectario** poco profundo, sin penetrar el ovario, liso. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides; caudículas suaves y granulosas. **Cápsula** elipsoide, con el perianto persistente; pedicelo y cuello apical, obsoletos; cuerpo 18 x 15 mm.

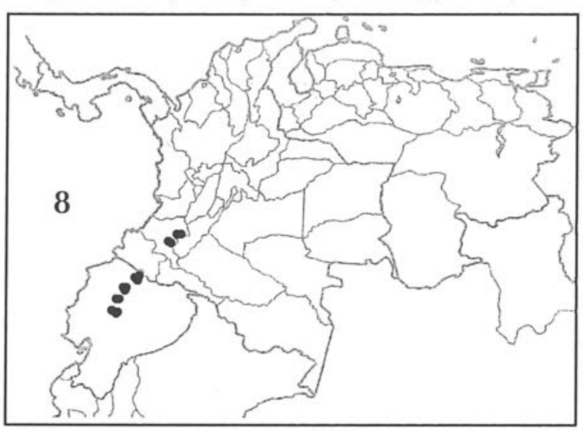
Epiphytic, monopodial **herb. Roots** basal, fleshy, thin. **Stem** simple, erect, laterally compressed, completely covered by foliar sheaths, occasionally producing an additional stem near the base by above the inflorescences. **Leaves** 7-12, distributed along the stem, distichous on a single plane, imbricating, articulate; sheaths tubular, minutely striated; blade linear to linear-lanceolate, obtuse, minutely apiculate, rugose, conduplicate and arching in natural position, coriaceous, dark green, margin entire, papillose. **Inflorescence** lateral, produced from near the base of the stem, creeping, pendent, flowering during several years, completely covered by bracts, of successive segments, branching, each segment made of various internodes, am ovate bract at each internode, the bracts occasionally tubular at the base, acute to short acuminate, striated, scarious; the new segment is produced from the upper part of the last internode; occasionally very old plants may produce keikis from the far parts of the inflorescences. **Floral bracts** similar to those of the scape, longer than the ovary, tubular, acuminate. **Flowers** solitary, a single flower from each segment, non-resupinate, greenish yellow to greenish brown; without fragrance. **Ovary** terete, thin, not inflated, smooth. **Sepals** partly spreading, free, fleshy, glabrous, acuminate, 5-veined, margins entire, spreading; the dorsal sepal triangular-ovate, the lateral sepals obliquely oblong to triangular, falcate. **Petals** spreading, free, narrowly lanceolate, apex short acuminate, 3-veined, glabrous, margins ciliate, spreading. **Lip** united to the column, ovate-cordiform, base slightly cordate, obtuse a the apex, margin spreading, ciliate; the sides erect, embracing the apex of the column without covering it; ecallose, with a low, rounded keel that disappears at the apex of the lip. **Column** short, thick, straight. **Clinandrium-hood** reduced, margin denticulate. **Rostellum** subapical, slit. **Nectary** shallow, without penetrating the ovary, smooth. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid; caudicles soft and granulose. **Capsule** ellipsoid, the perianth persistent; pedicel and apical neck obsolete.

OTHER SPECIMENS: COLOMBIA: Cauca: Forest of Inzá, 2700-3000 m, *Lehmann 6375*, K-L! La Ceja and San Julián, 1800-2400 m, *Lehmann 6851*, K-L! entre Coconuco y Paletará, 3200 m, 25 VIII 1961, *Uribe 3837*, AMES! COL! **ECUADOR: Carchi:** desviación de la carretera Tulcán-Ibarra hacia El Carmelo, km 18, 3300 m, *Hágsater 10531*, AMO! km 18 hacia El Carmelo, 3300 m, pressed cult. 15 VI 1991, *Hágsater 10704*, AMO! (Illustration, AMO!) El Vínculo, 22 VIII 1920, *Holmgren 895*, S! **Chimborazo:** Pallatanga, VII 1891, *Sodiro s.n.*, QPLS! P! **Pichincha:** Mt. Pasachoa, 2900-3200 m, 1 V 1985, *Dodson 15812*, QCNE! Mt. Pasachoa, 3000 m, 15 VII 1983, *Hirtz 1130*, MO! QCNE! SEL! Ibid. *Hirtz 1131*, MO! QCA! QCNE! SEL! Pululahua, 2800 m, 1983, *Hirtz 1234*, SEL! Pasachoa, 3300 m, VIII 1984, *Hirtz 1881*, MO! Mt. Iliniza, 3000 m, 20 X 1984, *Hirtz 2038*, MO! Coturco (Yaruqui), 2800 m, *Sodiro 7*, QPLS! Cayambe, Mojanda, IX 1919, *Sodiro 110*, QPLS! **Sucumbios:** El Mirador, Playon de San Francisco-Julio Andrade, km 12, 3200-3400 m, 11 VII 1991, *Dodson 18785*, MO!

OTHER RECORDS: VENEZUELA: Táchira: without data, published note in Orchids of Venezuela an Illustrated Field Guide, p. 288, 1979. **COLOMBIA: Cauca:** Páramo de Malvaza, Cordillera Central, *Negrete s.n.*, photo, AMO! **ECUADOR:** Without locality data, *Hirtz s.n.*, slide, AMO! **Imbabura**: 15 km de Cuicocha hacia Selva Alegre, 3050 m, 4 IV 1987, *Hágsater 8947*, spirit and illustration, AMO! Peñas Blancas, hort. Ecuagenera, pressed cult. 10 III 2003, *Hágsater 13880*, digital photo, AMO!

DISTRIBUTION AND ECOLOGY: Ranging from western Venezuela to central Ecuador, mainly in cloud and elfin forests along the interandean valley, at [ca. 2000] 2800-3400 m altitude. Flowering mainly from May to October.

RECOGNITION: *Epidendrum sophronitoides* belongs to the *Takulumena* group which is recognized by the small, *Vanda*-like plants, with simple, imbricating, distichous leaves, and a lateral complicated inflorescence, producing new, single-flowered segments over several years. The species is recognized by the non-pubescent, greenish yellow to copper-green flowers, the margin of the petals and lip are ciliate, and the apex of the floral segments acuminate, sepals are 10-16 mm long. *Epidendrum dasyanthum* Hágsater (syn. *Takulumena vazquezii* Szlach., Mytnik, A. Rom. & Marg.) has all the floral segments strongly pubescent on the ventral surface, the flowers are salmon pink to reddish, sepals 9-13 mm long. *Epidendrum rhodovandoides* Hágsater has cardinal-red to reddish magenta colored flowers, sepals and petals are subacute, small, 4-5 mm long. *Epidendrum psilosepalum* Hágsater & E. Santiago has similar colored flowers, but the petals and the borders of the lip are strongly pubescent, sepals glabrous, 7-8 mm long.

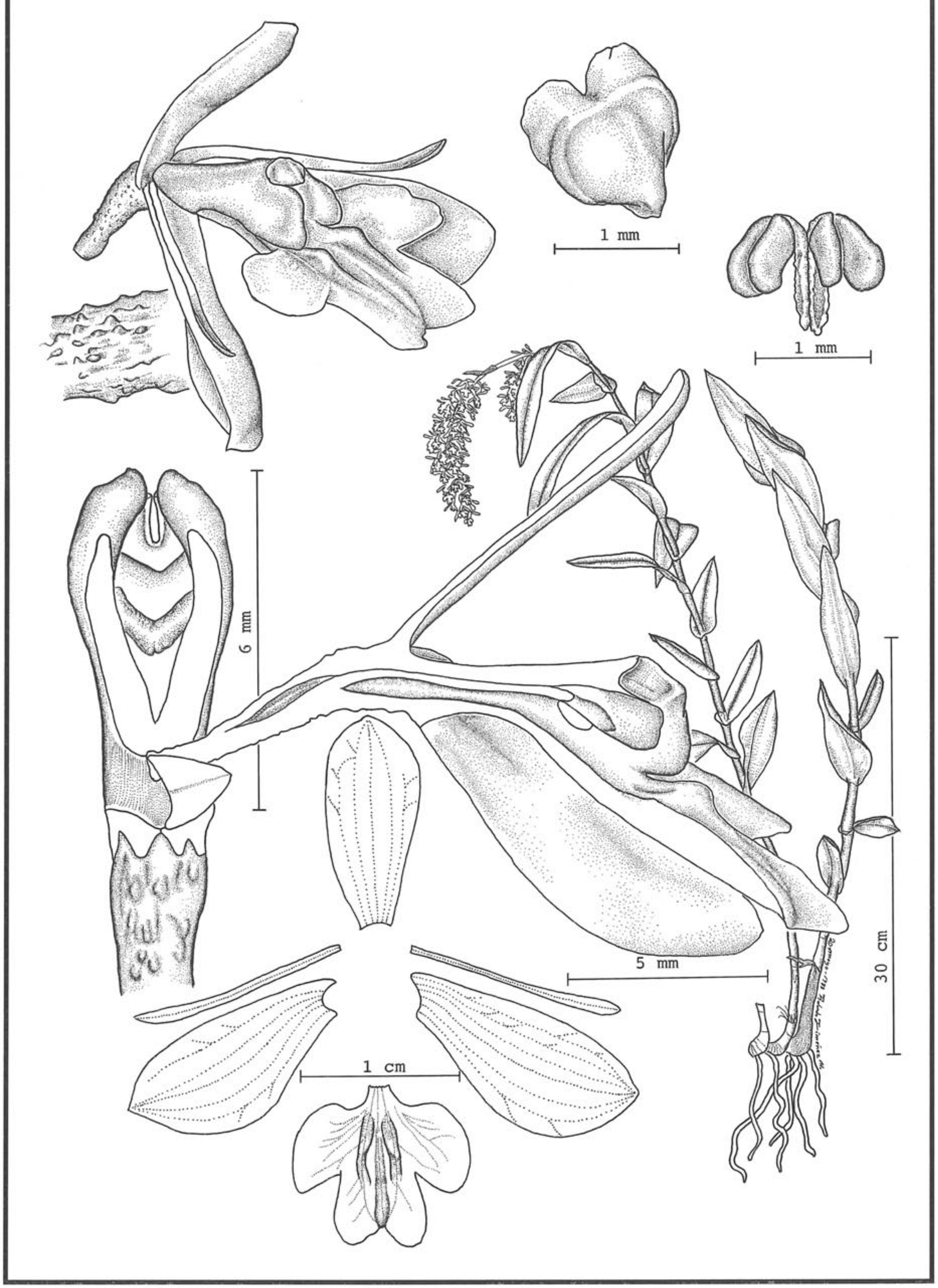


***NOTE:** We do not have the type material at hand to confirm the absence of pubescence on the floral segments; we only have slides of the specimens at hand. The slides were taken during visits to the herbaria several years ago. The original description makes no mention of any hairs.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek σοθρος, modest, small, and –οειδης, resemblance, in reference to the similarity of the flower to that of *E. sophronitis* Lindl.

Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM STALLFORTHIANUM Kraenzl. **Plate 1181**

EPIDENDRUM STALLFORTHIANUM Kraenzl., Gard. Chron. ser 3. 51: 114. fig. 49. 1912.

Type: MEXICO: Veracruz: Environs of Orizaba, ***Stallforth s.n.*** Holotype: B (destroyed). Neotype (here designated): Mexico: Veracruz: Teocelo, Tejeria, ca. 6 km de Teocelo hacia Llano Grande, pasando Monte Blanco, 680 m, col. 27 XII 1986, pressed 21 V 1988, ***Gerardo A. Salazar 2516.*** AMO! (Illustration voucher) Isoneotypes: AMES! K!

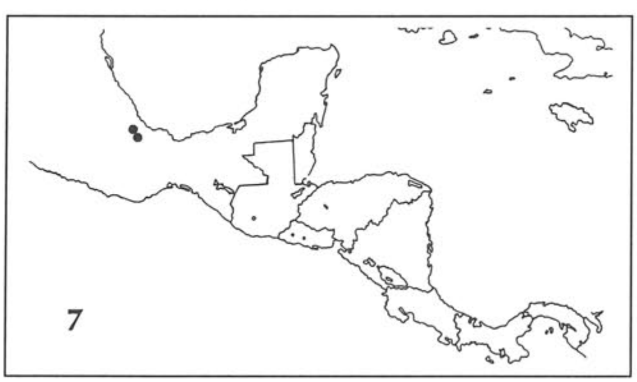
Hierba epífita, simpodial, cespitosa, erecta, 42 cm de alto ó más, incluyendo la inflorescencia. **Raíces** basales, carnosas, gruesas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, algo lateralmente aplanados, rectos, 20 x 0.25-0.5 cm. **Hojas** 5 a más, dísticas, distribuidas a lo largo del tallo; vaina foliar, tubular, lateralmente aplanada, 2.0-3.5 cm de largo; lámina elíptica, aguda, ligeramente carinada, subcoriácea, margen entero, extendido, 15.0-16.5 x 2-3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, pluriracemosa, 20-22 cm de largo, puede florecer de los nudos de la inflorescencia primaria en años posteriores, formando racimos, laxos y elongados; pedúnculo 10 cm de largo, cubierto por 2-3 brácteas imbricadas, tubulares, oblongo triangulares, agudas, envolventes, 3.0-5.0 cm de largo; raquis terete, liso. **Brácteas florales** generalmente más cortas que el ovario, las basales ligeramente de más de la mitad de largo del ovario, progresivamente más cortas hacia el ápice, abrazadoras, ovado triangulares, agudas, 1.2-4.0 mm de largo. **Ovario** terete, verrugoso papiloso, 6.0-6.5 x 0.2-0.4 mm. **Flores** 15-25 por racimo, simultáneas, resupinadas, sépalos y pétalos café, columna verde con el ápice blanco, labelo blanco con crema a café pálido, fragancia muy desagradable, a hojas de té. **Sépalos** entreabiertos, libres, glabros, subcoriáceos, obovados, obtusos, 5-nervados, margen entero, extendido, 10.0-10.5 x 3.0-4.0 mm; los **laterales** oblicuos. **Pétalos** entreabiertos, libres, glabros, filiformes, agudos, 1-nervados, margen entero, extendido, 7.5-10.0 x 0.3-0.5 mm. **Labelo** unido a la columna, trilobado, base truncada, carnoso, 6.5-7.0 x 6.7-7.5 mm; bicalloso, los callos laminares, prominentes, prolongándose hasta la mitad de la lámina del labelo; el disco con una carina central prominente, carnosa, la cual se prolonga hasta el seno del lóbulo medio; lóbulos laterales oblicuamente ovados, enteros, ápice subagudo a redondeado, 2.0-2.7 x 3.5-4.0 mm; lóbulo medio subcuadrado, ligeramente más ancho hacia el ápice, el ápice emarginado, 3.5-3.8 x 3.2-3.7 mm. **Columna** recta, obcónica, base delgada, 5.8-6.4 mm. **Clinandrio** reducido, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, angostamente obovoides, lateralmente comprimidos; caudículas suaves y granulosas, de longitud similar a ligeramente más largas que la de los polinios; viscidio viscoso, transparente. **Rostelo** apical hendido. **Lóbulos laterales del estigma** de 1/2 de la longitud de la cavidad estigmática. **Nectario** corto, penetrando 1/5 del ovario, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, somewhat laterally compressed, straight. **Leaves** 5 or more, alternate, distributed throughout the stem; foliar sheaths tubular, laterally compressed; blade, elliptic, acute, slightly carinate, subcoriaceous, margin entire, spreading. **Inflorescence** apical, pluri-racemose, producing new racemes in later years from the nodes of the inflorescence, the racemes lax-flowered; peduncle relatively short, covered by 2-3 imbricating, tubular, oblong-triangular, acute bracts; rachis terete, smooth. **Floral bracts** generally shorter than the ovary, the basal ones slightly more than half the length of the ovary, the apical ones progressively shorter, amplexicaul, ovate-triangular, acuminate. **Ovary** terete, short, verrucose-papillose. **Flowers** 15-25 per raceme, simultaneous, resupinate, sepals and petals brown, column green at base, white towards the apex, lip white and cream-colored to pale brown; fragrance disagreeable, of tea leaves. **Sepals** partly spreading, free, glabrous, subcoriaceous, obovate, obtuse, 5-veined, margin entire, spreading; the lateral lobes oblique. **Petals** partly spreading, free, glabrous, filiform, acute, 1-veined, margin entire, spreading. **Lip** united to the column, fleshy, 3-lobed, base truncate; bicallose, the calli laminar, prominent, prolonged to the middle of the disc, with a prominent, fleshy mid-vein in between the callii and reaching the apical sinus; lateral lobes obliquely ovate, entire, apex subacute to rounded; midlobe subquadrate, slightly wider towards the deeply emarginate apex. **Column** straight, obconical, base thin. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, narrowly obovoid, laterally compressed; caudicles soft and granulose, about as long as the pollinia; viscidium viscous, transparent. **Rostellum** apical, slit. **Nectary** short, penetrating 1/5th of the ovary, smooth.

OTHER SPECIMENS: MEXICO: Veracruz: 4-5 km antes de llegar a Ixhuacán, viniendo por Pocitos, 1600 m, 22 VI 1986, *Cházaro 3806*, XAL!

DISTRIBUTION AND ECOLOGY: Endemic from the state of Veracruz, Mexico, in the vicinity of Orizaba and Teocelo. Epiphytic in oak forests, 680-1600 m altitude. Flowering in May and June.

RECOGNITION: *Epidendrum stallforthianum* belongs to the Anceps Group, which is recognized by the simple stems, generally elongate, compound racemose inflorescence producing new successive racemes with time, fleshy flowers, filiform to narrowly spatulate petals, and the Polyanthum Subgroup which has elongate, not subcorymbose racemes. The species is recognized by the somewhat laterally compressed stems, verrucose-papillose ovary, lax-flowered racemes, the flowers brown, lip creamy-white, disagreeable fragrance, sepals ovate, 5-veined, 10.0-10.5 mm long, 3-lobed lip, the lateral lobes entire, semi ovate, the midlobe subquadrate, emarginate, with 2 calli prolonged to the middle of the blade, the disc with a prominent central keel. *Epidendrum tuxtlense* Hágsater, García-Cruz & L.Sánchez, which grows on north-facing slopes in the states of southern Veracruz and northern Oaxaca, along the Gulf of Mexico, has the apical half of stems ancipitose, compact racemes, unornamented ovaries, small, (sepals 5.0-7.5 mm long) yellow-orange flowers with the lip pale yellow and the basal half of the column green, the apical half white, seminal fragrance, the lateral lobes of the lip suborbicular to subrectangular and the midlobe oblong-rectangular, with a deep sinus at the apex. *Epidendrum polyanthum* Lindl. known from Mexico to Honduras has terete stems with yellow-orange flowers, lip with entire lateral lobes.

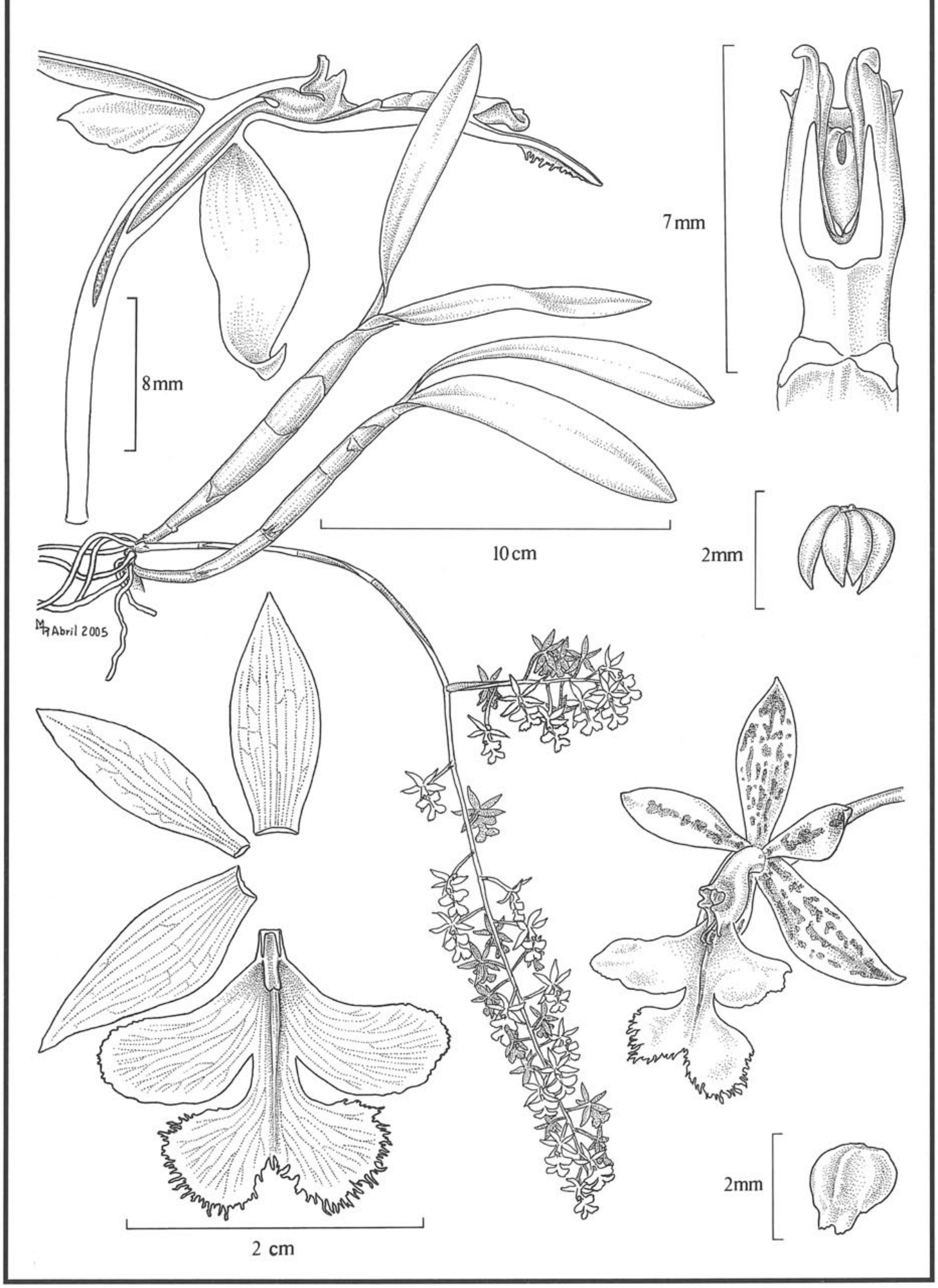


CONSERVATION STATUS: DD. Data deficient. Highly endemic but locally abundant [fide *Salazar 2516*].

ETYMOLOGY: In honor of Mr. Stallforth of Wiesbaden, Germany, who discovered the species in the vicinity of Orizaba, Veracruz.

REFERENCE: García Cruz, C. J. & L. Sánchez 1999. **Flora de Veracruz** fasc. 112. Orchidaceae II: *Epidendrum*: 93-96.

Authors: E. Hágsater & L. Sánchez S. **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM STAMFORDIANUM Bateman **Plate 1182**

EPIDENDRUM STAMFORDIANUM Bateman, Orchid. Mex. Guat., t. 11. 1838.

Type: GUATEMALA: Lago Izabal "Isabal", VI 1937, ***G. U. Skinner s.n.*** Holotype: K-Lindl.! The specimen is annotated "Skinner, Guatemala", and includes the two simple inflorescences on the left side of the sheet. The right hand paniculate inflorescence annotated "sent to Woburn" is not part of the type.

Auliza stamfordiana (Bateman) Brieger, *nom. Illeg.* In Rudolf Schlechter, Die Orchideen 3rd ed. 1(9): 548. 1977.

Synonyms: *Epidendrum basilare* Klotzsch, Allg. Gartenzeitung 11: 193. 1843 (plate in Link, Klotzsch and Otto´s, Ic. Plant. Rar. Hort. Reg. Bot. Berol. 2. p. 111. t. 45. 1844). Type: Venezuela, Caracas. Holotype B, destroyed; Photo of holotype at AMES! *Psilanthemum basilare* Klotzsch ex Stein, Orchideenbuch, 238. 1892.

Epidendrum cycnostalix Rchb.f., Bot. Zeitung (Berlín) 10: 731. 1852. Type: Panamá, Chiriquí, *J. Warscewicz*. Holotype: W 52105!

Epidendrum stamfordianum Bateman var. *pictum* Lemaire, Jard. Fleuriste. 3. t. 251. 1852; México: Veracruz, 1852, Hort. *Mr. Brys*. Lectotype (here designated): Plate in Jard. Fleuriste. 3. t. 251. 1852.

Epidendrum stamfordianum var. *pictum* Ramírez Goyena, Fl. Nicarg. 2: 759. 1911. No specimen cited. Non Lemaire 1852.

Epidendrum stamfordianum Bateman var. *parviflorum* Regel, Index Sem. Hort. Petrop. 19. 1856. Type: Guatemala; no specimen seen.

Epidendrum stamfordianum Batem. var. *lawrencianum* Hort. ex Stein, Orchideenb. 240. 1892. No specimen cited.

Hierba epífita, simpodial, cespitosa, de 25-53 cm de alto. **Raíces** basales, carnosas, gruesas, 2-2.7 mm de grosor. **Tallos** formando seudobulbos, fusiformes, rectos, homoblásticos, con un pedicelo delgado, 10-27 x 0.7-1.7 cm; cubiertos por 3-7 vainas tubulares, finamente estriadas, escariosas, fibrosas con el tiempo, 2-6 cm de largo. **Hojas** 2-5, agregadas hacia el ápice de los seudobulbos, alternas, articuladas, erectas extendidas; vaina foliar tubular, finamente estriada, 10-40 mm de largo; lámina oblongo-elíptica a oblongo-obovadas, rara vez angostamente-elípticas o angostamente-obovadas, obtusas a redondeadas, en ocasiones ligeramente retusas, cortamente mucronada, coriácea, margen entero, 6.5-27 x 3-7 cm. **Bráctea espatácea** ausente. **Inflorescencia** originándose del ápice de un seudobulbo abortivo, de manera que parece basal del rizoma, racemosa o paniculada, laxa o densa, erecta, 30-70 cm de largo; pedúnculo, terete, delgado, 11-23 cm de largo; provisto de 2 a 8 brácteas tubulares, agudas, finamente estriadas, amplexicaules, las basales imbricadas, oblongo triangulares, 4-6 x 0.5-0.8 cm; raquis recto o a veces en ligero zig-zag. **Brácteas florales** mucho más cortas que el ovario, abrazadoras, oblongo triangulares reduciéndose hacia el ápice hasta llegar a ser triangulares, acuminadas, 2-20 x 0.4-1 mm. **Flores** 8-65, simultáneas, resupinadas, sépalos y pétalos verdosos con manchas púrpuras o guindas, labelo blanco en la base, amarillo limón a crema en el ápice con manchas y líneas violáceas en el callo y en lóbulo medio, los lóbulos laterales y columna blancos. **Ovario** terete, delgado, liso ligeramente inflado detrás de los sépalos, 20-35 mm de largo. **Sépalos** extendidos, libres, elíptico-lanceolado, acuminado a agudo, cortamente mucronados, 5-nervados, con venas subsidiarias a ambos lados de la central, margen entero, ligeramente reflexo; el **dorsal** 12-18 x 3.5-5 mm; los **laterales** oblicuos, con una quilla dorsal diminuta, 13-20 x 4-6 mm. **Pétalos** extendidos, libres, linear elípticos a linear oblanceolados, acuminados a agudos, cortamente mucronados, 3-nervados, las laterales ramificadas, margen extendido reflexo, entero a ligeramente crenulado, 12-16 x 2.5-3 mm de ancho. **Labelo** unido a la columna, trilobado, cuneado en la base, 10-12 x 15-17 mm; bicalloso, los callos digitiformes, prominentes, paralelos, cortos, con una quilla intercallosa, delgada, lisa, alargada, a lo largo del centro del labelo, hasta el ápice del lóbulo medio, muy prominente a manera de vena engrosada; **lóbulos laterales** recurvado-oblongos a obovados, ampliamente redondeados, recurvados, margen basal entero, el apical eroso, 6-9 x 3-7 mm; **lóbulo medio** separado de los lóbulos laterales por senos profundos, angostos, formando un istmo angosto en la base, flabelado, bilobado, apiculado, formado por dos lóbulos, ovados, redondeados, margen eroso, 6-8 x 9-11 mm. **Columna** arqueada cerca de la base, delgada, gradualmente dilatada hacia el ápice, 5.5-7.5 mm de largo, el ápice formando 4 lobos, los laterales triangulares, agudos, los dorsales formando un **clinandrio** corto, en forma de embudo, margen entero. **Rostelo** apical, hendido. **Antera** obovoide, 4-locular. **Polinios** 4, tipo ala de pájaro, semiovoides, agudos, desiguales, el par interior más pequeño, lateralmente aplanados, ancipitosos. **Nectario** profundo, penetrando ca. de 1/3 del ovario, delgado, no inflado, liso. **Cápsula** elipsoide, pedicelo delgado, corto, 0.8-1.2 cm de largo; cuerpo de 1.8-3.4 cm de largo, 2-8 mm de diámetro; cuello apical corto de 2-9 mm de largo.

Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thick. **Stems** forming fusiform pseudobulbs, straight, homoblastic, with a long pedicel; covered when young by 3-7 tubular sheaths, minutely striated, scarious, becoming fibrous with time. **Leaves** 2.5, aggregate towards the apex of the pseudobulb, alternate, articulate, erect-spreading; foliar sheath tubular, minutely striated, short; blade oblong-elliptic, to oblong-obovate, rarely narrowly elliptic or narrowly obovate; apex obtuse to rounded, sometimes slightly retuse, short mucronate, coriaceous, margin entire. **Inflorescence** originating from the apex of an abortive pseudobulb, appearing basal from the rhizome, racemose or paniculate, lax or dense-flowered, erect; peduncle terete, thin, provided with 2-8 tubular bracts, acute, minutely striated, the basal ones imbricating, oblong-triangular, rachis straight to somewhat zigzag. **Floral bracts** much shorter than the ovary, oblong-triangular, the apical ones progressively smaller becoming triangular acuminate. **Flowers** 8-65, simultaneous, resupinate, sepals and petals greenish with purple or mauve spots, the lip white at the base, the apex lemon-yellow to creamy white with purple dots and stripes on the callus and midlobe; lateral lobes and column white. **Ovary** terete, thin, smooth, slightly inflated behind the sepals. **Sepals** spreading, free, entire, elliptic-lanceolate, acuminate to acute, short mucronate, with subsidiary veins on the sides of the central vein, margin slightly reflexed, 5-veined; lateral sepals oblique with a minute dorsal keel. **Petals** spreading, free, linear-elliptic to linear-oblanceolate, acuminate to acute, short mucronate, 3-veined, the lateral veins branching, margin spreading, entire to slightly crenulate. **Lip** united to the column, 3-lobed, base cuneate, bicallose, the calli finger-like, prominent, parallel, short, with an intermediate, prominent, thin, smooth, elongate keel that runs down the middle to the apical sinus of the midlobe; lateral lobes oblong o obovate, recurved, widely rounded, basal margin entire, apical margin erose; midlobe separated from the lateral lobes by deep, narrow sinii, forming a narrow isthmus at the base, flabellate, bilobed, apiculate, forming a pair of ovate, rounded lobes, the margin erose, somewhat smaller than the lateral lobes. **Column** arching near the base, thin, gradually dilated towards the apex, apex 4-lobed, the lateral lobes triangular, acute, the dorsal lobes rounded, forming a short funnel-shaped **clinandrium hood**, margin entire. **Rostellum** apical, slit. **Anther** obovoid, acute, 4-celled. **Pollinia** 4, bird-wing-type, semiovoid, acute, unequal, the inner pair somewhat smaller, laterally compressed, ancipitose. **Nectary** deep, penetrating about 1/3rd of the ovary, thin, not inflated, smooth. **Capsule** pedicel thin, short, body ellipsoid, with short apical neck.

OTHER SPECIMENS AND RECORDS: See appendix.



DISTRIBUTION AND ECOLOGY: Widespread along the Pacific slope, and the lowlands of the Atlantic slope, from México (Veracruz, Oaxaca, Tabasco, Chiapas, Campeche, Yucatán, Quintana Roo); Belice, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panamá, Colombia, Venezuela. Epiphytic in semi-evergreen, evergreen high forest, and inundatable low forest, from sea level to 1200 m altitude. Flowering from November through May, mainly from December to March.

RECOGNITION: *Epidendrum stamfordianum* belongs to the Psilanthemum Group which is characterized by the sympodial, caespitose habit, the somewhat thickened, fusiform stems-pseudobulbs with narrow, apically bilobed, subcoriaceous leaves distributed on the distal half of the stems, large, apical, erect, paniculate inflorescence, usually produced from an abortive stem, greenish-yellow to pink flowers, with deeply 4-lobed lips. The species has fusiform pseudobulbs, with 2-4, widely elliptic, apical leaves, the inflorescence apparently basal, but arising from an abortive stem, rarely, in cultivation, from normal stems; sepals and petals green with purple spots, the lip lemon-yellow the creamy-white with violaceous spots and lines on the callus and midlobe; lateral lobes of the lip with outer margin entire, inner margin erose, midlobe flabellate, separated from the lateral lobes by deep sinus, with the apex bilobed, margin erose. It closely resembles *Epidendrum leeanum* (Rchb.f.) Hágsater from the llanos orientales of eastern Colombia and southern Venezuela which has shorter pseudobulbs, and a short compact inflorescence of smaller pink flowers.

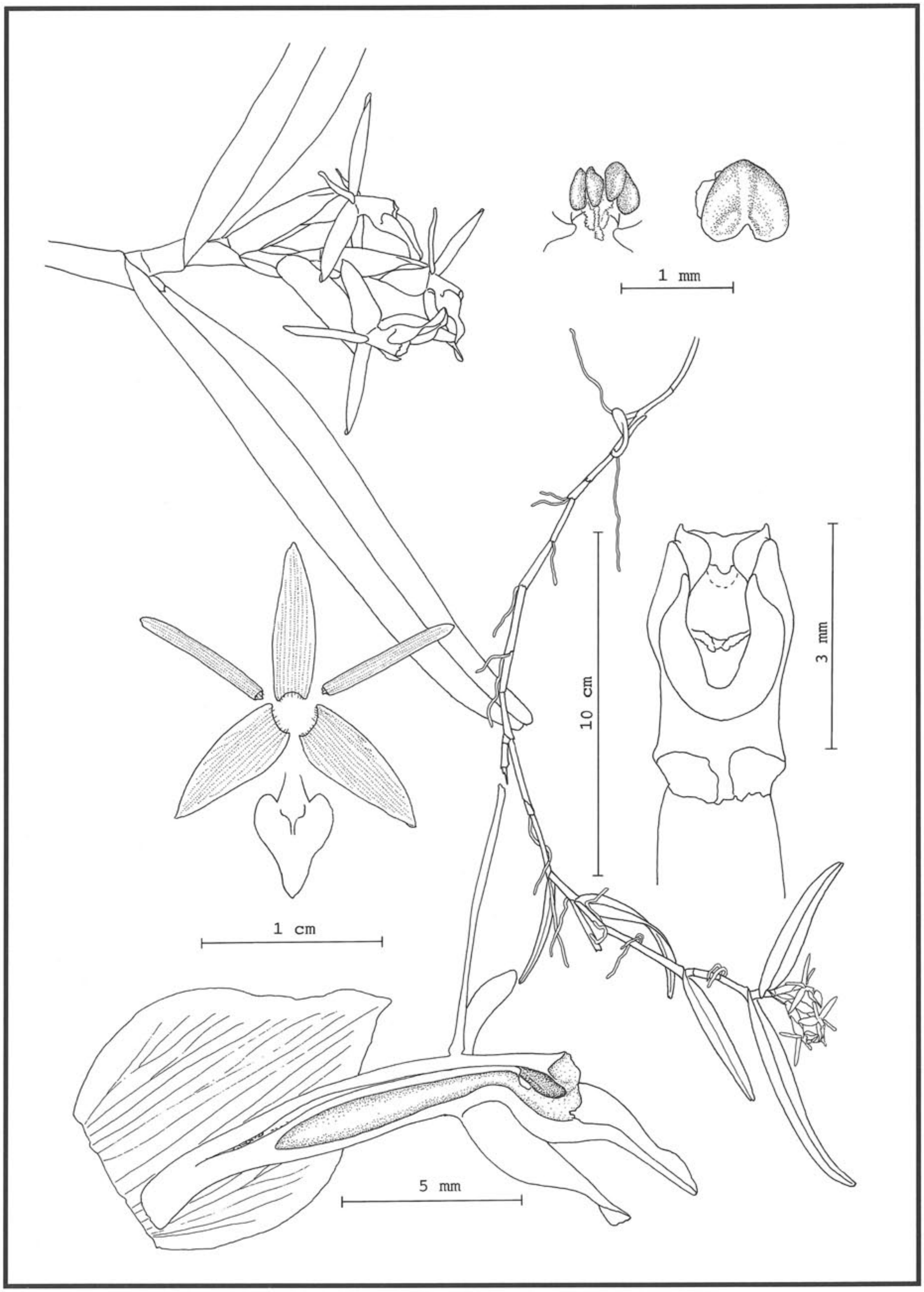
CONSERVATION STATUS: NT. Not threatened. Abundant where it is found in disturbed areas.

ETYMOLOGY: In honor of the Earl of Stamford and Warrington, who put together a large collection of tropical orchids in Enville Hall, England in the middle of the 19th century.

REFERENCES: Carnevali, G. and I. M. Ramírez-Morillo, 2003. *Epidendrum* in Steyermark, Berry, Yatskiewych and Holst, *eds.*, ***Flora of The Venezuelan Guyana***. 7: 343-344. Missouri Botanical Garden Press. St. Louis, Missouri; Behar, M. and O. Tinschert, 1998. ***Guatemala y sus Orquídeas***, Bancafé, Guatemala, pp 143, 223; García-Cruz, J., and L. Sánchez, 1999, ***Flora de Veracruz***, fasc. 112. Orchidaceae II: *Epidendrum:* 96-100; Hágsater, E., 2005. *Epidendrum* in Pupulin, F., ***Vanishing Beauty Native Costa Rican Orchids***, 1: 302. San José, C. R. Universidad de Costa Rica; Hágsater, E., J. García-Cruz and L. Sánchez-Saldaña, 2003. *Epidendrum* in Hammel, Grayum, Herrera and Zamora, *eds*., ***Manual de Plantas de Costa Rica***. 3: 163-164. Missouri Botanical Garden Press. St. Louis, Missouri; Hamer, F., 2001. *Epidendrum* in Stevens W. D., C. Ulloa, A. Pool and O. M. Montiel, ***Flora de Nicaragua*: Orchidaceae,** Missouri Botanical Garden Press, St. Louis Missouri, p. 1694; McLeish, et al. 1995. ***Native Orchids of Belize***. Rotterdam, Netherlands, p 196. Soto, M., *et al.* 2007. ***Orchids of Mexico***. Digital Catalogue: fig. 0410, México, Instituto Chinoín.

Authors: R. Jiménez M. & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM STEVENSII Hágsater **Plate 1183**

EPIDENDRUM STEVENSII Hágsater, Orquídea (Mexico City) 12(2): 284. 1992.

Type: COSTA RICA: Alajuela: Caña Chica entre El Alto de Villegas y Angeles Norte de San Ramón, 1250-1550 m, pressed from cult. 23 Jul. 1983, ***R. L. Dressler & C. K. Horich sub E. Hágsater* 7159**. Holotype: AMO! (illustration voucher). Isotype: CR!

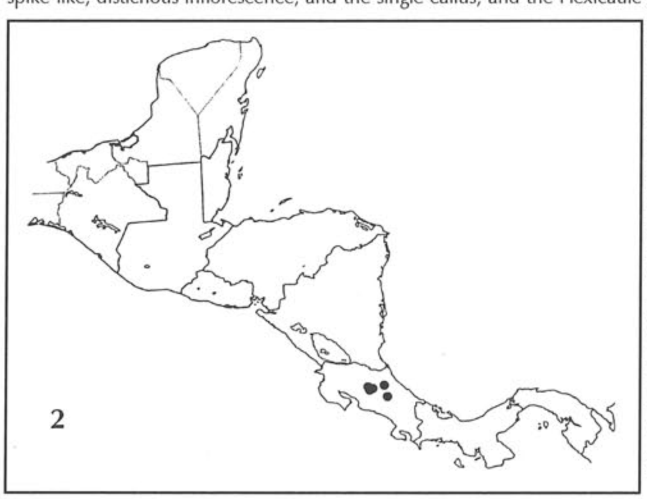
Hierba epífita, monopodial, ramificada, de tallos rastreros, 20-50 cm o más de largo. **Raíces** producidas a lo largo de los tallos, delgadas, < 1 mm de grosor. **Tallos** ramificados, tipo caña, sinuosos, teretes, el principal 15-50 x 0.15-0.40 cm, las ramas más cortas, 2-14 cm, producidas del tallo principal y cerca del ápice de las ramas anteriores. **Hojas** numerosas, alternas, distribuidas todo a lo largo del tallo principal y las ramas; vaina tubular, ligeramente estriada en seco, hasta 2.3 cm de largo; láminas articuladas, linear elípticas, subcoriáceas, lisas, ápice bilobado, margen entero; las del tallo principal de tamaño similar, excepto las 2 basales más pequeñas, de 4.0-7.0(10) x 0.3-0.7 cm; las de las ramas desiguales, progresivamente más largas hasta la penúltima, más cortas hasta iguales que las del tallo principal, 2.0-7.0 x 0.3-0.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo principal y de las ramas, florece una sola vez, racemosa, dística, sinuosa, 1.7-3.0 cm de largo, raquis apenas visible entre las brácteas, liso. **Brácteas florales** conduplicadas, prominentes, más largas que el ovario, ovadas al extenderse, agudas, 8-11 x 3-8 mm. **Flores** 2-3, simultáneas, verdes; fragancia no registrada. **Ovario** ligeramente inflado ventralmente en poco más de la mitad apical, 9-10 mm de largo. **Sépalos** extendidos, libres, glabros, subcoriáceos, angostamente lanceolado elípticos, ápice agudo, 7-nervados en la base, los nervios laterales subdivididos cerca de la base, de manera que aparecen 11-nervados a la mitad, margen entero, revoluto, 7-9 x 1.9-2.5 mm; los laterales con una quilla dorsal apical. **Pétalos** extendidos, membranáceos, lineares, ápice obtuso, margen entiro, extendido, 3-nervados en la base, los nervios laterales subdivididos de manera que son 5-nervados a la mitad, 7-8.5 x 0.75-1 mm. **Labelo** unido a la columna, triangular, cordado en la base, angostado arriba de la mitad, subcoriáceo, ápice agudo, 4.5-6.0 x 3.5-4.5 mm; callo en forma de "Y". **Columna** recta, gruesa, 3.5 mm de largo. **Clinandrio** reducido, repando. **Lóbulos laterales del estigma** cortos, de 1/3 del largo de la cavidad estigmática. **Nectario** profundo, penetrando 2/3 partes del ovario, algo inflado, liso. **Antera** reniforme, con un seno en el ápice, 4-locular. **Polinios** 4, semiovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas del doble de largo que los polinios; viscidio semilíquido, transparente. **Cápsula** elipsoide ovoide, 16 x 5 mm.

Epiphytic, monopodial, branching **herb**, stems creeping. **Roots** produced throughout the stems, thin. **Stems** branching, cane-like, sinuous, terete, the main stem long, the branches shorter, produced from the main stem and near the apex of the previous branches. **Leaves** nume[illegible]us, [illegible]te, distributed throughout the stems; sheaths tubular, slightly striated when dry; blades articulate, linear-elliptic, subcoriaceous, smooth, apex bilobed, margin entire; those of the main stem similar in size, except for the smaller basal two, those of the branches unequal, progressively longer except for the last, shorter to equal to those of the main stem. **Inflorescence** apical, from the main stem and the branches, flowering only once, racemose, distichous, sinuous; rachis mostly covered by the bracts, smooth. **Floral bracts** conduplicate, prominent, longer than the ovary, ovate when spread, acute. **Flowers** 2-3, simultaneous, green. **Ovary** slightly ventrally inflated along somewhat more than the apical half. **Sepals** spreading, free, glabrous, subcoriaceous, narrowly lanceolate-elliptic, apex acute, 7-veined at the base, the lateral veins subdivided near the base so as to appear 11-veined at the middle, margin entire, revolute; the lateral sepals with an apical dorsal keel. **Petals** spreading, membranaceous, linear, apex obtuse, margin entire, spreading, 3-veined at the base, the lateral veins subdivided so as to appear 5 veined at the middle. **Lip** united to the column, triangular, base cordate, narrowed above the middle, subcoriaceous, apex acute; callus "Y" shaped. **Column** straight, thick, short. **Clinandrium-hood** reduced, repand. **Nectary** deep, penetrating 2/3 of the ovary, somewhat inflated, smooth. **Anther** reniform, with a apical sinus, 4-celled. **Pollinia** 4, semiovoid, laterally compressed, subequal; caudicles soft and ganulose, twice as long as the pollinia: viscidium semiliquid, transparent. **Capsule** ellipsoid-ovoid.

OTHER SPECIMENS: COSTA RICA: Without locality, 1 I 1882, *Hübsch s.n.,* W! Costa Rica: La Palma, 1090 m, 30 X 1922, *Brenes 46(376),* AMES x2! **Alajuela:** San Pedro de San Ramon, 1075 m, 17 IX 1921, *Brenes s.n.,* AMES! Ibid. 1150 m, 12 XI 1921, *Brenes 104,* NY! Ibid., 1075 m, XI 1921, *Brenes 109,* AMES! CR! La Paz de San Ramón, 1100-1200 m, 29 VI 1925, *Brenes* 112, F! Los Angeles de San Ramon, 21 VII 1932, *Brenes 216 123B*, NY! La Palma, 1090 m, 30 X 1922, *Brenes 376*, AMES x2! La Palma de San Ramon, 1175 m, 15 XII 1922, *Brenes 509 214*, CR! San Pedro, 1050 m, 28 VI 1924, *Brenes 866*, NY! La Palma de San Ramón, 26 VII 1924, *Brenes 960,* NY! La Paz de San Ramon, 1100-1200 m, 29 VI 1925, Brenes (112) 1316, F! Entre La Balsa et Cataratas de San Ramón, 825 m, 12 X 1925, *Brenes (261) 1447*, F! La Balsa de San Ramón, 800 m, 12 X 1925, *Brenes 1447*, CR! La Palma de San Ramón, 1150 m, 4 VIII 1924, *Brenes 2250*, F! Los Angeles de San Ramón, 21 VII 1932, *Brenes 16123b*, NY! Concepción, San Ramón, 20 VIII 1981, *Hágsater 5596*, AMO! USJ! Ibid. 12 IX 1982, *Hágsater 5597*, AMO! (Illustr., AMO!) Piedades Norte, San Ramón, 12 IX 1982, *Hágsater 5610*, AMO! Caña Chica entre El Alto de Villegas y Angeles Norte de San Ramón, 1250-1550 m, 23 VII 1983, *Hágsater 7160*, MO! Río Cataratas, 700-800 m, 29 VIII 1979, *Stevens 13900*, AMO! CR! F! MO! Quebrada Volio, 1100-1500 m, 10 IX 1979, *Stevens 14079*, AMO! MO! Río Balsa, 1050-1150 m, 10 IX 1979, *Stevens 14250*, AMO! MO! La Balsa de San Ramón, 900 m, 29 XII 1974, *Taylor 17782*, ILL! NY! US! **Cartago:** La Estrella, 26 III 1924, *Standley 39512*, AMES! US! Cordillera de Talamanca, ca. 2650 m, 26 VIII 1961, *Weber 6089*, AMES! **Heredia**: Cerro Central de Zurqui, 1600-1700 m, 27 XII 1920, *Dodge 6123*, AMES! Montaña Azul, entre Varablanca y Cariblanco, 16 XI 1984, *Hágsater 6816*, AMO! CR! USJ! San Isidro, Cerro Central de Zurqui, 1600-1700 m, 27 XII 1920, *Valerio 6123*, AMES! **San José:** Between Bajo La Hondura and Alto La Palma, 1400-1500 m, 19 VII 1983, *Barringer 3964*, F! Desamparados, San Cristobal Sur, 1850 m, 26 IX 1996, *García-Cruz 944*, AMO x2! La Hondura, 1300-1700 m, 2 III 1924, *Standley 36254*, AMES! F! US! Ibid. *Standley 37681*, AMES! US! Ibid. *Standley 37695*, AMES!

DISTRIBUTION AND ECOLOGY: Endemic to Costa Rica, mainly on the Pacific slope of the Cordillera Central, and the western edge of the Cordillera de Talamanca, between 700-1850 m altitude, epiphytic in cloud forest or wet forest. Flowering generally between July and November.

RECOGNITION: *Epidendrum stevensii* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Flexicaule Subgroup which has a stragling plant habit, where the main stem is not very evident, and the sepals have a dorsal keel which is generally prominent. The speces is recognized by the long, narrow, linear-elliptic leaves up to 7 x 0.7 cm leaves, the green flowers with the lip triangular, narrowed above the middle, apex acute, sepals 6-8 mm long, floral segments acute. It is similar to *Epidendrum flexicaule* Schltr. which is vegetatively very similar, and has very similar copper-green though larger flowers, the sepals 9-12 mm long and a wider lip, 7 x 6 mm, the floral segments rounded at the apex. *Epidendrum modestiflorum* has consistently shorter (< 5 cm), wider leaves, (up to 15 mm), the relatively large green flowers, sepals 11 mm long, the lip constricted below the middle, 6.4-4.5 mm, and the deep nectary without forming a prominent vesicle. *Epidendrum veraguasense* Hágsater from Panama, has large, white flowers, a larger lip, 8 x 6 mm, constricted above the middle, and the nectary only penetrates half the ovary and forms a prominent vesicle behind the perianth.

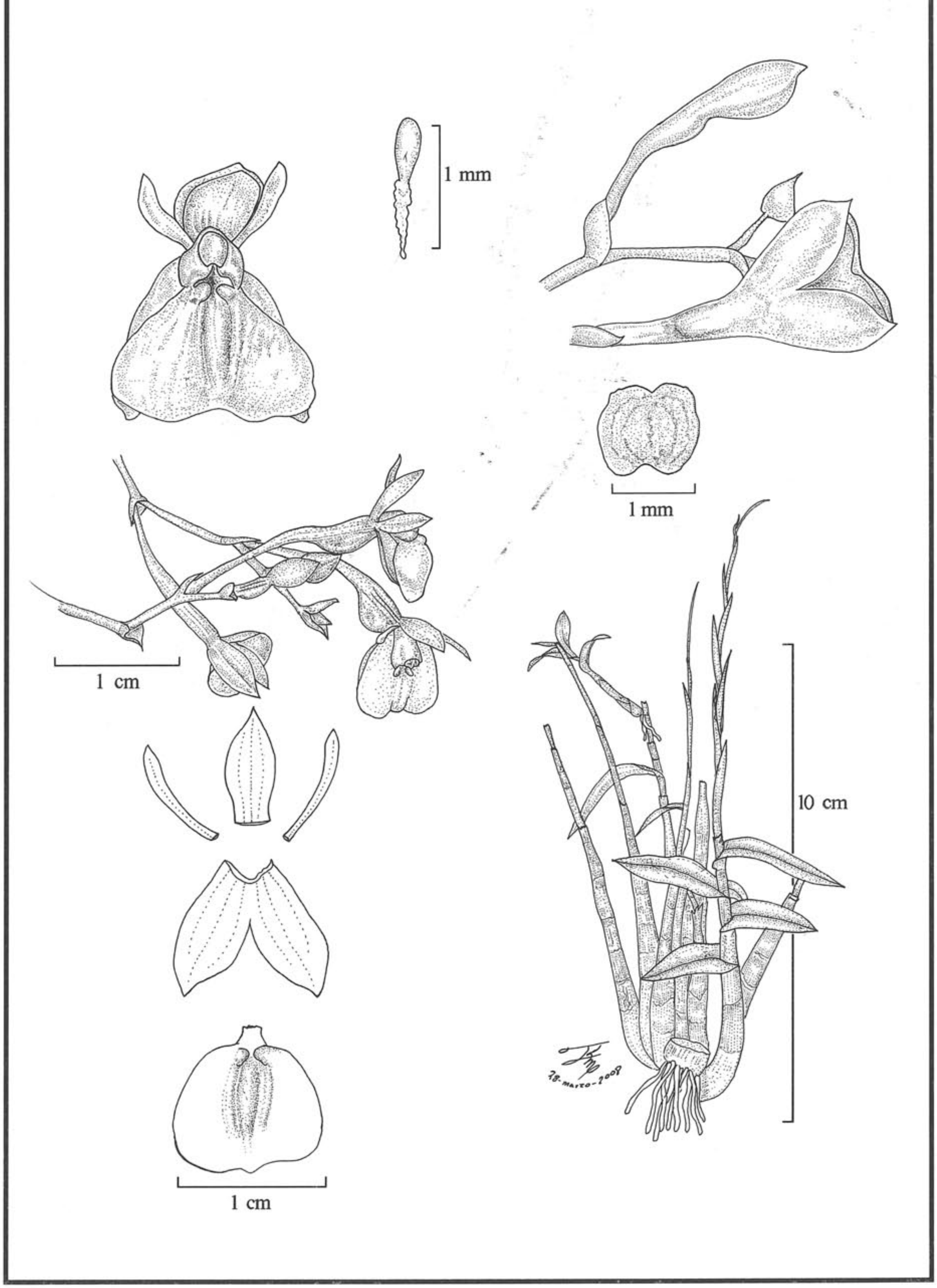


CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Dr. Warren Douglas Stevens, Director of the Research Department of the Missouri Botanical Garden, who collected the species in Costa Rica. Dr. Stevens is a specialist in Asclepiadaceae and Apocynaceae, and the flora of Central America, in particular of Nicaragua.

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EPIDENDRUM STROBILICAULE Hágsater & Benelli **Plate 1184**

EPIDENDRUM STROBILICAULE Hágsater et Benelli, *sp. nov.*

Type: BRAZIL: Mato Grosso; Serra de São Vicente, col. 700 m, Maio 2005, rupícula. ***Mário de Castro s.n.*** (Illustration voucher). Holotype: UFMT 38.352! Isotype: UFMT 38.353!

Epidendro physodi Rchb.f. simile sed caulibus ad basem incrassatis longe conicis teretibus, ovarii vesicula verticaliter applanata, labello obreniformi ad basem cuneato, abhorrens.

Hierba litófita, simpodial, cespitosa, erecta, hasta 55 cm del alto incluyendo la inflorescencia. **Raíces** basales, carnosas, delgadas, 1-2 mm de grosor. **Tallos** tipo caña, engrosado en la base y progresivamente más delgado, largamente cónicos, teretes, de color verde amoratado, erectos, rectos, formados por 7-12 nodos de largo equivalente, los nodos basales provistos de vainas no foliosas, papiráceas, semitransparentes, fibrosas; 13-31 x 1.0-1.9 cm; raramente produciendo un keiki de un nodo basal de la inflorescencia. **Hojas** 3-6, distribuidas en el tercio apical del tallo, articuladas, dísticas, extendidas; vainas tubulares, lisas, algo amoratadas; lámina elíptico-lanceolada, aguda, subcoriácea, margen entero, extendido; 8.5-15 x 1.5-2.6 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, elongada, erecta, racemosa, produciendo racimos nuevos durante varios años y entonces pluriracemosa, plurianual, laxa, 8-25 cm de largo; pedúnculo terete, delgado, recto, 5-20 cm de largo; provisto de 5-7 brácteas, imbricadas (que lo cubren completamente) tubulares, lateralmente comprimidas, ancipitosas, acuminadas, de tamaño decreciente, escariosas y fibrosas con el tiempo, 3-5.3 cm de largo; raquis corto, terete, delgado, flexuoso, 5-25 mm de largo. **Brácteas florales** mucho más cortas que el ovario, infundibuliformes, con el ápice oblicuo, agudo, 4-7 mm de largo. **Ovario** terete, delgado, liso, 10-14 mm de largo; ventralmente con una vesícula muy prominente detrás del perianto, ocupando el tercio apical del ovario, verticalmente plana. **Flores** 4-14 por racimo, sucesivas, desarrollándose 2-4 a la vez, resupinadas, verdes, el labelo teñido de rojo borgoña, con el margen verdoso; sin fragancia. **Sépalos** entreabiertos, elíptico-ovados, agudos, 3-nervados, margen entero, extendido, membranáceos, 7-8 x 2.8-3.2 mm; el dorsal libre; los laterales ligeramente fusionados en la base y unidos de manera oblicua a la columna. **Pétalos** entreabiertos, libres, linear oblanceolados, ápice obtuso, 1-nervados, margen entero, extendido, membranáceos, 7 x 1 mm. **Labelo** unido a la columna, entero, algo convexo, obreniforme, cuneado en la base y con un seno poco profundo en el ápice que forma un par de lobos semicirculares incipientes, margen entero, extendido, 6.5 x 7.2 mm; bicalloso, los callos pequeños, carnosos, delgados, paralelos; disco provisto de tres quillas, bajas, la apical que se desvanece cerca del ápice de la lámina, las laterales más cortas. **Columna** gruesa, recta, muy corta, ca. 4 mm de largo. **Clinandrio** reducido, margen entero, dejando la antera totalmente descubierta. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más largas que los polinios, viscidio semilíquido, glauco. **Rostelo** apical, hendido. **Nectario** penetrando cerca de 1/3 del ovario, formando una vesícula muy prominente, globosa, pero plana en el eje vertical, liso interiormente. **Cápsula** no vista.

Lithophytic, sympodial, caespitose, erect **herb. Roots** basal, fleshy, thin. **Stems** cane-like, thickened at the base and progressively thinner, long-conical, formed by 7-12 nodes of equal length, the basal nodes provided with non-foliar, papery, semitransparent, fibrous sheaths. **Leaves** 3-6, distributed along the apical 1/3 of the stem; sheaths tubular, smooth, somewhat purple tinged; blades spreading, elliptic-lanceolate, acute, subcoriaceous, margin entire, spreading. **Spathaceous bract** absent. **Inflorescence** apical, elongate, straight, racemose, producing new racemes over several years and then pluriracemose, lax flowered; peduncle terete, thin, straight, provided with 5-7 imbricating, tubular, laterally compressed, ancipitose, acuminate bracts decreasing in size, becoming scarious and fibrous with time; rachis short, terete, thin, flexuous. **Floral bracts** much shorter than the ovary, infundibuliform, apex oblique, acute. **Ovary** terete, thin, smooth, with a prominent, vertically flat vesicle behind the perianth, occupying 1/3 of the ovary. **Flowers** 4-14 per raceme, successive, 2-4 developing at one time, resupinate, green, the lip tinged with burgundy-red, margin greenish; fragrance none. **Sepals** party spreading, elliptic-ovate, acute, 3-veined, margin entire, spreading; the lateral sepals obliquely united to the column. **Petals** partly spreading, free, linear-oblanceolate, apex obtuse, 1-veined, margin entire, spreading, membranaceous. **Lip** united to the column, obreniform, base cuneate, apex with a deep sinus, forming two small, semicircular, shallow lobes, margin entire, spreading; bicallose, the calli small, fleshy, thin, parallel; disc provided with three low, keels, the mid-keel nearly reaching the apex of the lip, the lateral keels shorter. **Column** thick, straight, very short. **Clinandrium-hood** reduced, margin entire, the anther totally exposed. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, glaucous. **Rostellum** apical, slit. **Nectary** penetrating about 1/3 of the ovary, forming a prominent, globose, yet vertically flat vesicle, smooth.

OTHER SPECIMENS: None seen.

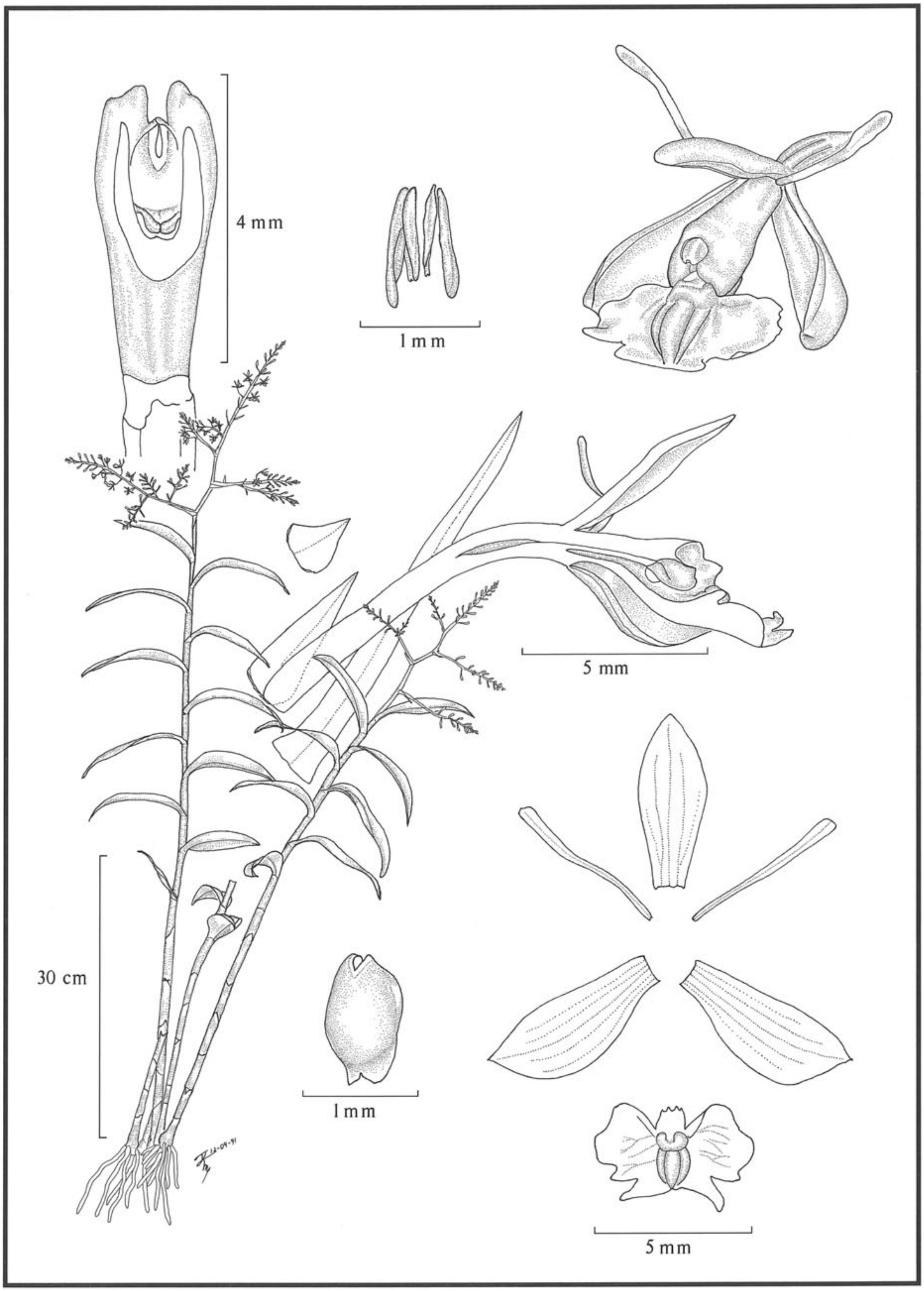
DISTRIBUTION AND ECOLOGY: Known only from the Chapada dos Guimarães, and the Serra de São Vicente, in the proximity of Cuiabá, Mato Grosso, Brazil, at about 550-700 m altitude. Rupiculous. Flowering from March to September.

RECOGNITION: *Epidendrum strobilicaule* belongs to the Physinga Group which is characterized by the caespitose plants, the apical and racemose inflorescence producing new racemes with time and thus pluriracemose, the successive flowers opening one at a time on an elongate peduncle with acuminate bracts, the lip entire and the ovary with a prominent vesicle. The species is recognized by the relatively large rupiculous plants, with the base of the stems thickened and progressively attenuate, the lip is obreniform, spreading, and the clinandrium-hood much reduced and entire, exposing the anther cap totally. *Epidendrum prostratum* (Lindl.) Cogn. has small plants with thin stems, but the sepals and petals are partly spreading, the base of the lip deeply cordate, with 3 prominent keels on the disc, and the prominent clinandrium-hood deeply emarginate. *Epidendrum physodes* Rchb.f. also has thin stems, the leaves inserted at a 45° angle to the stem, lanceolate, short-acuminate, gray-green leaves 3.5-7 cm long, spreading petals, the lip transversely elliptic with a pair of prominent, rounded calli in front of the column, and the clinandrium-hood short, fleshy, the margin slightly crenate. *Epidendrum acreense* (Brieger & Bicalho) E.A.Christenson found due west of this species, at the foot of the Andes, has white flowers, a transversely oblong, strongly concave lip embracing the column and a prominent, bifid clinandrium-hood.



CONSERVATION STATUS: The species is found within the limits of the Area de Preservação Ambiental de Chapada de Guimarães, and the Parque Nacional de Chapada de Guimarães.

ETYMOLOGY: From the Greek στροβιλος, spinning top or cone-like structure, and καυλος, stem, in reference to the characteristic thickened stems which are thickened at the base and progressively tapering towards the apex, like an inverted carrot.



EPIDENDRUM SUBNUTANS Ames & C.Schweinf.

Plate 1185

EPIDENDRUM SUBNUTANS Ames & C.Schweinf., Schedul. Orchid. 10: 73. 1930.

Type: COSTA RICA: La Palma, cultivated at San Ramón, 1200 m, 4 VI 1923, ***A. M. Brenes 593.*** Holotype: AMES!

Hierba epífita a muy raramente terrestre, simpodial, cespitosa, 40-130 cm de alto. **Raíces** basales, delgadas, carnosas, 1-2.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes, delgados, erectos, rectos, 30-68 [110] x 0.1-0.65 cm. **Hojas** 7-11, distribuidas en la mitad apical del tallo, articuladas, alternas; vainas tubulares, fibrosas con el tiempo, 13-43 x 1-6.5 mm; lamina elíptico lanceolada, acuminada, con las nervaduras claramente marcadas, margen entero, desiguales en tamaño (las basales generalmente más pequeñas) 9-18.7 x 1.1-2.7 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, paniculada, arqueada, pluriflora, laxa, 11.5-28 cm de largo; pedúnculo delgado, lateralmente aplanado, 3-6.6 cm de largo; provisto generalmente de 1 bráctea prominente, tubular, acuminada y fibrosa con el tiempo, 16-55 mm de largo; raquis terete, delgado, algo flexuoso, ligeramente papiloso. **Brácteas florales** generalmente de menos de la mitad del largo del ovario, raramente poco más largas que este, triangular lanceoladas, acuminadas, abrazadoras, 1-5 [7-15] mm de largo. **Ovario** terete, delgado, no inflado, papiloso, 7-9 mm de largo. **Flores** 33 hasta ca. 200, sucesivas, con botones apicales apenas en desarrollo cuando abren las primeras flores, resupinadas, sépalos y pétalos verdosos con el labelo blanco, inmaculado; sin datos de fragancia. **Sépalos** extendidos, libres, carnosos, oblanceolados, unguiculados, con la mitad apical cóncava, ápice subagudo, 3-5-nervados, dorsalmente fina y escasamente pustulados en el ápice, margen entero, extendido, 4-6 x 1.5-2.5 mm; los **laterales** oblicuos, con una quilla dorsal baja. **Pétalos** extendidos, libres, membranáceos, filiformes, poco dilatados hacia el ápice, ápice redondeado, 1-nervados, margen apical ligeramente eroso, 4-6 x 0.5-0.8 mm. **Labelo** unido a la columna, trilobado, cordado en la base, 2.3-2.5 x 4.6-5.7 mm; unicalloso, el callo carnoso, con el ápice truncado a incipientemente y diminutamente 3-lobado, disco provisto de 3 quillas carnosas, prominentes, alargadas hasta el seno apical de la lámina; lóbulos laterales oblicuamente dolabriformes, margen ligeramente eroso, 2.3 x 1.5 mm; lóbulo medio pequeño, transversalmente subcuadrado, ápice truncado, ligeramente retuso, formando un par de lóbulos triangulares, incipientes, margen entero, 0.7-1 x 2.3-2.5 mm. **Columna** recta, delgada en la base, algo más amplia en el ápice, 3.5-4.5 mm de largo, el ápice lateralmente bidentado, los dientes pequeños, triangulares, subagudos. **Clinandrio** reducido, margen entero. **Antera** angostamente ovoide, 4-locular. **Polinios** 4, tipo ala de pájaro, fuertemente comprimidos lateralmente, el par interior más pequeños; caudículas del mismo largo que los polinios interiores. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños, de ¼ del largo de la cavidad estigmática. **Nectario** sin penetrar detrás del perianto, delgado, liso. **Cápsula** no vista.

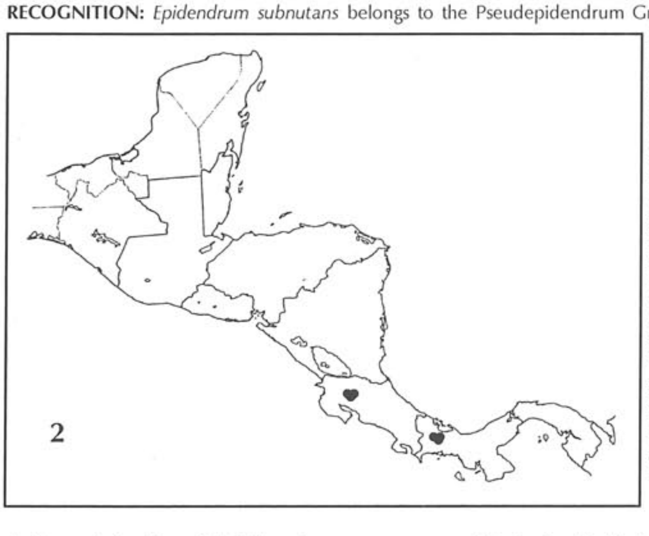
Epiphytic or rarely terrestrial, sympodial, caespitose **herb. Roots** basal, fleshy. **Stems** simple, cane-like, terete, thin. **Leaves** 7-11, distributed along the apical half of the stem; sheaths tubular, becoming fibrous with time; blade lanceolate-elliptic, acuminate, the veins clearly marked. **Inflorescence** apical, paniculate, arching, lax, many-flowered; peduncle thin, generally provided with a single prominent, tubular, acuminate bract; rachis somewhat flexuous, slightly papillose. **Floral bracts** generally les than half as long as the ovary, rarely slightly longer, triangular-lanceolate, acuminate. **Ovary** terete, papillose. **Flowers** 33 to ca. 200, successive, resupinate, sepals and petals greenish, the lip white, immaculate. **Sepals** spreading, oblanceolate, unguiculate, the apical half concave, apex subacute, 3-5 veined, dorsally minutely and scarcely pustulate towards the apex, the lateral sepals oblique, with a low dorsal keel. **Petals** spreading, filiform, slightly dilated towards the apex, rounded, 1-veined, apical margin slightly erose. **Lip** united to the column, 3-lobed, base cordate; callus single, fleshy, the apex truncate to slightly 3-lobed, disc provided with 3 fleshy, prominent keels; lateral lobes obliquely dolabriform, margin slightly erose; midlobe small, transversely subquadrate, apex slightly retuse, forming a pair of triangular, short lobes. **Column** straight, thickened towards the apex, the apex bidentate, the lateral teeth small, triangular, subacute. **Clinandrium-hood** reduced, margin entire. **Anther** narrowly ovoid, 4-celled. **Pollinia** 4, "bird-wing" type; caudicles as long as the inner pair of pollinia. **Rostellum** apical, slit. **Nectary** without penetrating beyond the perianth, thin, smooth.

OTHER SPECIMENS: COSTA RICA: Alajuela: La Palma de San Ramón, 1250 m, 26 XII 1924, *Brenes 251*, CR! Ibid. 5 VII 1927, *Brenes (53)1635*, AMES! Ibid. 5-8 VIII 1935, *Brenes 68(20635)*, F! NY! Monteverde, 1520-1580 m, 16 VI 1976, *Dryer 240*, CR! San Carlos, Zapote, *Endres 139*, W x5! Monteverde, 1600 m, 21 VII 1985, *Haber 2061*, CR! MO! Ibid. Río Guacimal, 1350 m, 31 VII 1985, *Haber 2083*, CR! MO! Zapote, 1650 m, 4 V 1938, *Smith 466*, AMES! K! Ibid. 1600 m, 18 V 1938, *Smith 564*, AMES! San Luis de Zarcero, 1550 m, 18 V 1938, *Smith 612*, AMES! Alfaro Ruíz, Zarcero, 1600 m, 15 VI 1938, *Smith 781*, F! Ibid. La Peña de Zarcero, 1400 m, 11 VII 1938, *Smith 875*, AMES! **Guanacaste:** San Gerardo, 3 km N of Santa Elena, 1600 m, 5 VI 1989, *Atwood 89-121*, SEL! USJ! Monteverde, 1550 m, 12 VII 1990, *Gentry 71601*, MO! Río Chiquito de Tilarán, Río Negro, 1450 m, 1 VII 1986, *Haber 5181*, SEL! Vicinity of Santa Elena, 1600 m, 28 IV 1980, *Meerow 1033*, SEL! **Puntarenas:** Monteverde, 1600-1700 m, 7 VI 1989, *Atwood 89-128*, SEL! Puntarenas on border with Alajuela, 1700-1750 m, 24 VI 1989, *Atwood 89-237*, SEL! USJ! Monteverde, Cerro Amapola, 1400 m, 21 IV 1989, *Bello 814*, MO! Ibid. Río Veracruz, 1300 m, 4 V 1991, *Bello 2727*, MO! Monteverde above Santa Elena, 1500 m, 30 VII 1983, *Barringer 4180*, F! Guacimal, Río Veracruz, 1500 m, 8 VIII 1987, *Haber 7371*, MO! Reserva Monteverde, 1550-1600 m, 31 III 1990, *Haber 9819*, INB! Ibid. 1460 m, 25 I 1988, pressed cult. 26 IV 1991, *Hágsater 9407*, AMO x2! (Illustration voucher) Ibid. pressed cult. 18 V 1991, *Hágsater 9407*, AMO! Ibid. pressed cult. 22 VI 1993, *Hágsater 9407*, AMO! Ibid. pressed cult. 1 VII 1998, *Hágsater 9407*, AMO x2! Ibid. 1500-1550 m, 18 VII 1992, *Ingram 1545*, F! MO! USJ! Monteverde, Canadians Biological Station, 1550 m, 27 V 1995, *Penneys 523*, MO! **PANAMA: Chiriqui:** Bajo Mono, Cerro Horqueta, 5000-7000 ft, 27 VII 1947, *Allen 4794*, BM! Without precise locality data, 1 VII 1927, *Powell 428*, AMES! between Boquete and Monte Rey, 20 VII 1971, *Croat 15735*, MO! Ibid. *Croat 15835*, MO! Bajo Chorro, Boquete, 6000 ft, 5 I 1938, *Davidson 43*, AMES! F! MO! Ibid. 13 I 1938, *Davidson 113*, F! Ibid. 1 III 1938, *Davidson 355*, F! MO! US! Cerro Colorado, ca. 1400 m, 17 VIII 1975, *Dressler 5111*, Herb. Dressler! Boquete, Cerro Horqueta, 5000-6000 ft, 8 VIII 1967, *Dwyer 7721*, AMES! MO! UC! US! Ibid. *Dwyer 7724*, MO! Cerro Horqueta, 4500-5500 ft, 20 VII 1968, *Dwyer 8781*, MO! Ibid. 1666-2333 m, 8 VIII 1967, *Kirkbride 148*, MO x2! Palo Alto, E of Boquete, 23 VII 1959, *Stern 1038*, AMES! MO x2! Ibid. 23 VII 1959, *Stern 1017*, MO! Vicinity of Bajo Mona and Quebrada Chiquero, 1500 m, 18 VII 1940, *Woodson 541*, AMES! MO! Ibid. 2500 m, *Woodson 548*, BM! Ibid. *Woodson 554*, AMES! BM! US! Ibid. *Woodson 580*, MO! Bajo Chorro, 1900 m, 16 VII 1948, *Woodson 648*, AMES!

OTHER RECORDS: San José: Pérez Zeledón, *Hágsater 8232*, spirit, slide and illustration, AMO!

DISTRIBUTION AND ECOLOGY: Ranging from Costa Rica and western Panama, generally epiphytic in cloud forest, 1200-1750 m. Flowering from March to August.

RECOGNITION: *Epidendrum subnutans* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, and Paniculatum Subgroup which has green flowers, the lip white, the disc sometimes marked with purple. The species is recognized by the paniculate inflorescence, successive, small, green, flowers (sepals 4-6 mm long) the lip and apex of the column white, immaculate, with a single callus, the midlobe subquadrate, slightly retuse, forming two triangular, short lobes. *Epidendrum longibracteatum* Hágsater is very similar but the flowers are simultaneous and the floral bracts on the main rachis are very long, prominent, and the midlobe of the lip is clearly bilobed, with the two lobes separated by a deep sinus. *Epidendrum piliferum* Rchb.f. has plants with large flowers (sepals 12.5-17 mm long) green and white, the disc marked with 5 lines of purple dots. *Epidendrum horichii* Hágsater from has short, generally epiphytic plants, with sepals 7-10 mm long, and the lip usually marked with purple dots or a pink blotch.

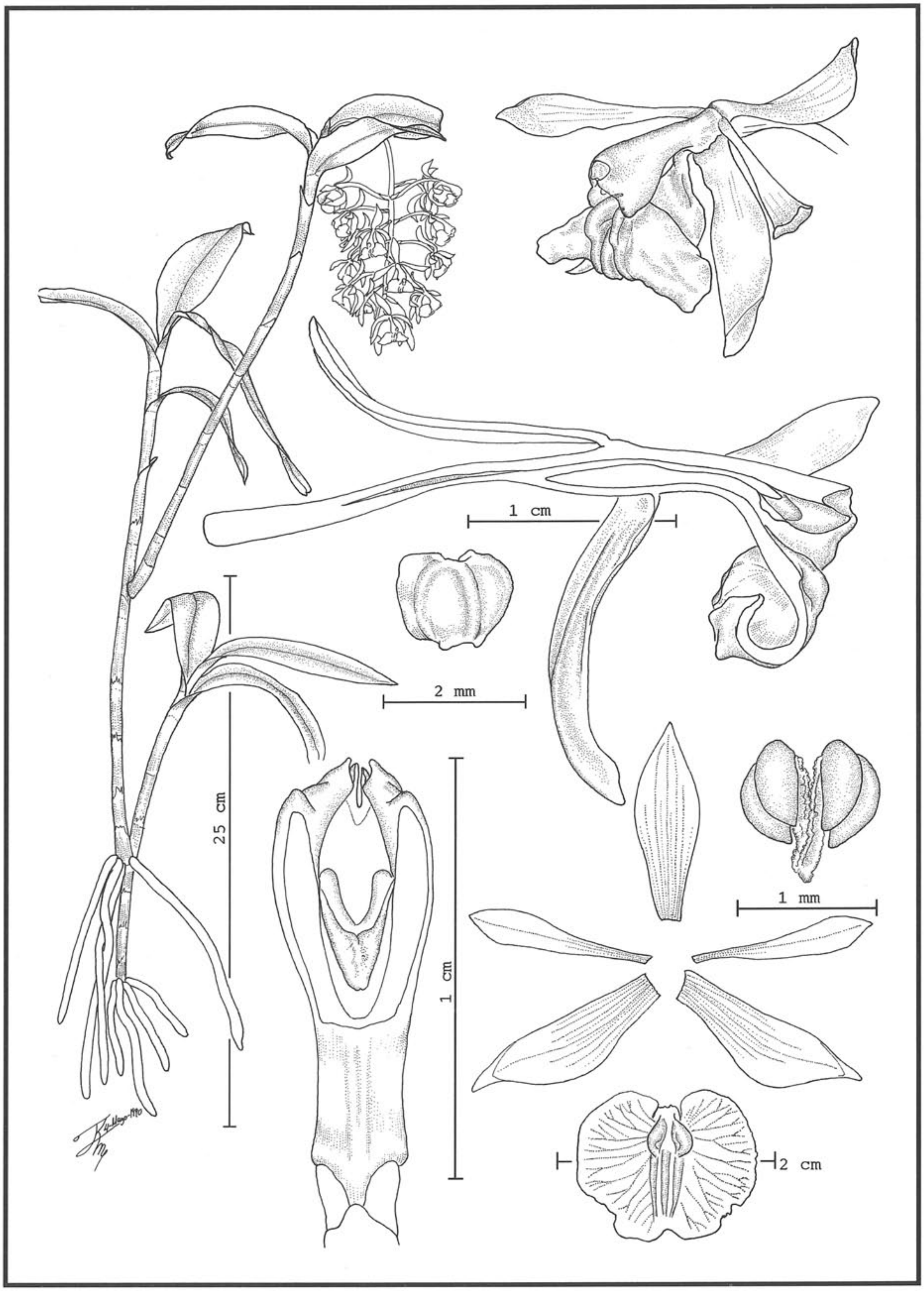


CONSERVATION STATUS: DD. Data deficient. Apparently common in the Monteverde Reserve.

ETYMOLOGY: From the Latin *sub*, somewhat, not completely, and *nutans*, nodding, in reference to the arcuate, somewhat nodding racemes of the inflorescence.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM TACANAËNSE Hágsater, Soto Arenas & E.Santiago **Plate 1186**

EPIDENDRUM TACANAËNSE Hágsater, Soto Arenas & E.Santiago, *sp. nov.*

Type: MEXICO: Chiapas: Volcán Tacaná, subiendo por Talquian, línea divisoria México-Guatemala, 2000-2500 m, col. 16 July 1987, pressed cult. 15 May 1990, (Illustration voucher) ***M. A. Soto 3443, I. Alcocer y R. Jiménez M.*** Holotype: AMO! Isotypes: AMES! MEXU! Clonotypes: pressed cult. 19 March 1991 UVG! CHIP! pressed cult. 3 April 1991, AMO! pressed cult. 18 April 1992, F! K! MO!

Epidendro radioferenti (Ames, F.T.Hubb. & C.Schweinf.) Hágsater simile sed sine labelli venarum radiantium crassificatione, sepalis petalisque basice viridibus, columnae apice et labello albo usque viridi pallido.

Hierba epífita, simpodial, erecta, donde cada tallo nuevo se origina de un entrenudo subapical del tallo anterior, ca. 50-120 cm de alto. **Raíces** producidas en la base de los tallos, tanto en la base de la planta como en la base de algunos tallos superiores maduros, carnosas, gruesas, 2-4 mm de grosor. **Tallos** sencillos, tipo caña, teretes, erectos, rectos, 18-35 x 0.2-0.7 cm; cubiertos de vainas no foliáceas, tubulares, ápice subagudo, escariosas, fibrosas con el tiempo, 12-47 mm de largo. **Hojas** 2-4, agrupadas hacia el ápice del tallo, alternas, articuladas; vainas tubulares, finamente estriadas, 0.7-2.7 x 0.3-0.7 cm; lámina elíptica, ápice redondeada, desigualmente bilobada, margen entero, subcoriácea, verde oscuro, 6.2-16 x 1.7-4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, florece una sola vez, racemosa, arqueada, 10-18 cm de largo; pedúnculo algo lateralmente aplanado, recto, 2-7 cm de largo, provisto de 1-3 brácteas angostamente triangulares, acuminadas, abrazadoras, escariosas, 16-21 mm de largo. **Brácteas florales** ca. de la mitad de largo del ovario, angostamente triangulares, acuminadas, abrazadoras, progresivamente más cortas, escariosas, 6-21 mm de largo. **Flores** 15-43, simultáneas, (aunque algunas apicales presentes aún en botón floral) resupinadas, sépalos y pétalos verdoso pálido con ligeros tintes rojizos, labelo verde pálido con disco blanco, callo amarillo pálido, columna verde en la base, mitad apical blanca en ocasiones con pequeña marca morada en el ápice, fragancia ligera, herbácea. **Ovario** terete, delgado, liso, no inflado, 15-32 mm de largo. **Sépalos** libres, ligeramente arqueados hacia adelante, angostamente elíptico obovados, agudos, 7-8-nervados, margen entero, extendido; el **dorsal** fuertemente reflexo, con una quilla dorsal pequeña; los **laterales** extendidos, oblicuos, con una quilla dorsal prominente, 16-19 x 5-6 mm. **Pétalos** libres, extendidos, ligeramente arqueados hacia delante, linear oblanceolados, agudos, 3-nervados, las nervaduras laterales cortas, margen entero, extendido, 14-17 x 2-3 mm. **Labelo** unido a la columna, subentero, suborbicular en forma general, (a incipientemente trilobado con los lóbulos laterales semiorbiculares y el lóbulo medio muy corto, ligeramente bilobado), cordado en la base, margen ligeramente eroso, la lámina revoluta en la mitad apical de manera que el labelo parece enrollado horizontalmente, 13.5 x 16 mm; bicalloso, los callos prominentes, delgados; disco provisto de tres quillas centrales, alargadas hasta cerca del ápice de la lámina. **Columna** recta, delgada en la base y gradualmente más ancha hacia el ápice, 10-11 mm de largo. **Clinandrio** corto, margen entero. **Antera** ovoide, 4-locular. **Polinios** 4, semiobovoideos, lateralmente comprimidos; caudículas más largas que los polinios, suaves y granulosas. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de 1/3 del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando ligeramente el ovario, justo detrás del perianto, no inflado, liso. **Cápsula** no vista.

Epiphytic, sympodial, erect **herb**, where each new stem originates from a subapical internode of the previous stem. **Roots** produced from the base of the stems, cane-like, terete, erect, straight; covered by non-foliaceous, tubular sheaths with the apex somewhat inflated, subacute, scarious, becoming fibrous. **Leaves** 2-4, aggregate towards the apex of the stem, alternate, articulate; sheaths tubular, minutely striated; blade elliptic, apex rounded, unequally bilobed, margin entire, subcoriaceous, deep green. **Inflorescence** apical, flowering only once, racemose, arching; peduncle somewhat laterally compressed, straight, provided with 1-3 narrowly triangular, acuminate bracts. **Floral bracts** about half the length of the ovary, narrowly triangular, acuminate, progressively smaller, scarious. **Flowers** 15-43, simultaneous (thought the apical ones may e in bud), resupinate, sepals and petals pale greenish, which slight reddish tinge, lip pale green, the disc white, callus pale yellow, column green ad the base, apical half white, sometimes with small purple marks at the apex; fragrance slight, herbaceous. **Ovary** terete, thin, smooth, not inflated. **Sepals** free, slightly arching forward, narrowly ovate-elliptic, acute, 7-8-veined, margin entire, spreading; the dorsal sepals strongly reflexed, with a small dorsal keel; the lateral sepals spreading, oblique, with a prominent dorsal keel. **Petals** free, slightly arching forward, narrowly linear-oblanceolate, acute, 3-veined, the lateral veins short, margin entire, spreading. **Lip** united to the column, subentire, suborbicular in general outline (sometimes slightly 3-lobed, with the lateral lobes semiorbicular, and the midlobe very short, slightly bilobed), base cordate, margin slightly erose, the whole lip strongly revolute in the middle, so as to appear rolled horizontally backwards; bicallose, the calli prominent, thin; disc provided with 3 central keels, elongate to near the apex of the lip. **Column** straight, the base thin, gradually thickened towards the apex. **Clinandrium-hood** short, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, semiobovoid, laterally compressed; caudicles longer than the pollinia, soft and granulose. **Rostellum** apical, slit. **Nectary** shallow, slightly penetrating the ovary, just behind the perianth, not inflated, smooth.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from the Tacaná Volcano, 2300 m, epiphytic on trees oak-*Chiranthodendron* forest remnants in corn fields. Flowering in cultivation March-May.

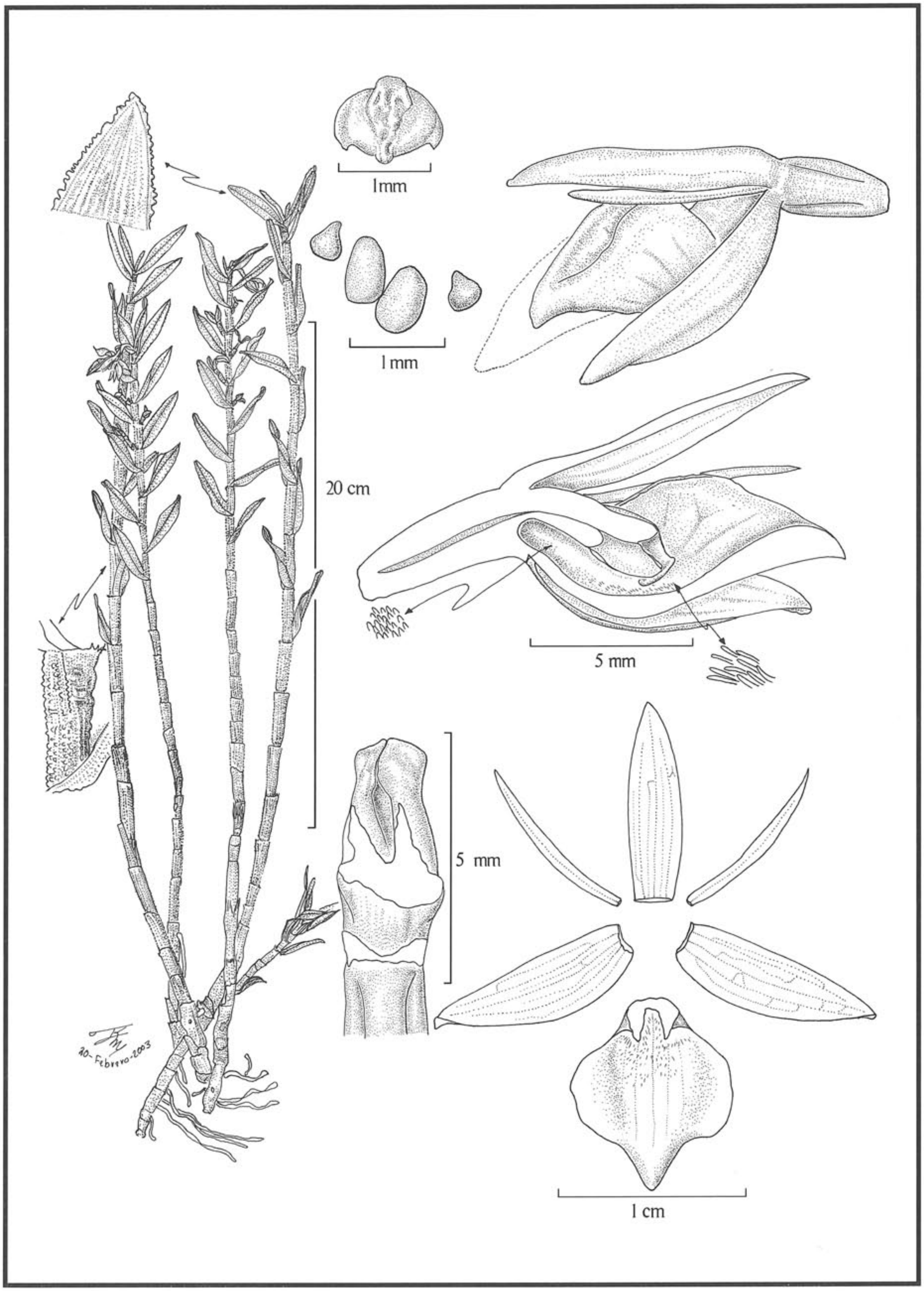
RECOGNITION: *Epidendrum tacanaënse* belongs to the Arbuscula Group, Arbuscula Subgroup which is characterized by the successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, arching, apical inflorescence with membranaceous, colorful flowers, the lip bicallose. The species is recognized by many-flowered inflorescence, the tepals green, sometimes tinged with slight reddish, the white to pale green, suborbicular to slightly 3-lobed lip with the apical half strongly revolute, and the disc with 3 prominent, parallel keels. It closely resembles *E. radioferens* which is practically identical in shape but the flowers are magenta-red to intense burgundy-red, with the lip having multiple radiating, thickened keels in addition to the 3 central keels, all the keels cream-colored. *Epidendrum arbuscula* Lindl. has greenish cream-colored flowers which turn yellowish brown with time, the sepals strongly arched forward, 13-16 mm long, and the lip clearly 3-lobed, with 3, evident keels on the disc. *Epidendrum alticola* Ames & Correll has a few-flowered inflorescence, white or cream-colored flowers, the disc suborbicular with yellow calli; the lip itself is spreading, not horizontally revolute.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the Tacaná Volcano, on the mexican-guatemalan border, overlooking the Pacific Ocean.

Authors: E. Hágsater, M. Soto & E. Santiago **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM TOLIMENSE Lindl. Plate 1187

EPIDENDRUM TOLIMENSE Lindl., Bot. Reg. misc. pg. 66. 1845.

Type: COLOMBIA: Tolima: ***Linden 1272,*** Holotype: K-L. illustration at W 5850!

Synonym: *Epidendrum rubioi* Hágsater & Dodson, Icones Orch. (Mexico City) 2: pl. 184. 1993. Type: ECUADOR: Carchi: Tulcán to El Carmelo, km 27, below Fraylejón, 3200 m, 7 July 1990***, E. Hágsater 10542, C. H. Dodson [18429], D. Rubio et. N. Revelo.*** Holotype: RPSC! Isotypes: QCNE x2! Flower in spirit, AMO!

Hierba terrestre y epífita, subcespitosa, ramificada arriba; 20-56 cm de alto. **Raíces** basales, delgadas, carnosas; 0.5-1.5 mm de grosor. **Tallos** teretes, producidos de cerca de la base del tallo anterior y en ocasiones con raíces a lo largo de la porción basal; ramificados en la parte media apical, los principales hasta 20-56 x 0.2-0.4 cm; las ramificaciones, 2.5-13 x 0.15-0.25 cm. **Hojas** numerosas, distribuidas a lo largo de casi todo el tallo, las inferiores caedizas; vainas tubulares, estriadas y verrugosas, hasta 25 mm de largo; lámina ovada a angostamente lanceolada, ápice agudo, con una quilla dorsal, margen eroso denticulado; las de los tallos principales; 1.5-3.7 x 0.4-0.9 mm; las de las ramificaciones; 2.3 x 7 mm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo maduro, racemosa, corta, arqueada, nutante; pedúnculo muy corto, terete, 1.5-2.0 mm de largo, en ocasiones con una bráctea cerca de la base, elíptica, redondeada, de margen eroso; 10 x 2 mm. **Brácteas florales** más cortas que el ovario, triangulares, acuminadas, amplexicaules; 5-9 mm de largo. **Ovario** terete, delgado, liso, no inflado; 5-8 mm de largo. **Flores** 2-3, más o menos sucesivas, de color amarillo o verde amarillento; sin datos de fragancia. **Sépalos** entreabiertos, libres, linear lanceolados hasta ovado elípticos, agudos, carnosos, ligeramente cóncavos, 3-nervados, margen entero; 10-11 x 2.7-3.7 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, subparalelos con respecto a la columna, ligeramente arqueados hacia arriba, lineares, agudos, 1-nervados, margen entero; 9.5 x 1-2 mm. **Labelo** unido a la columna, entero, con los lados involutos, abrazando completamente a la columna en posición natural, cóncavo, suborbicular a ovado subcordado al extenderse, abruptamente agudo, carnoso, pubescente en la base, margen entero; 7-9 x 8.1-9 mm; ecalloso. **Columna** recta, corta, gruesa, arqueada ca. de 90° con respecto al ovario, 4-5 mm de largo. **Clinandrio** corto, entero. **Antera** reniforme, diminutamente papilosa, 4locular. **Polinios** 4, obovoides. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** cortos, cerca de 1/3 del largo de la cavidad estigmática. **Nectario** poco profundo, sin traspasar el perianto, pubescente frente a la cavidad estigmática, la pubescencia dirigida hacia el fondo del nectario. **Cápsula** subglobosa, 1.7 x 1.0 cm, con pedicelo corto y delgado de ca. 1 mm de largo, sin cuello apical, perianto persistente.

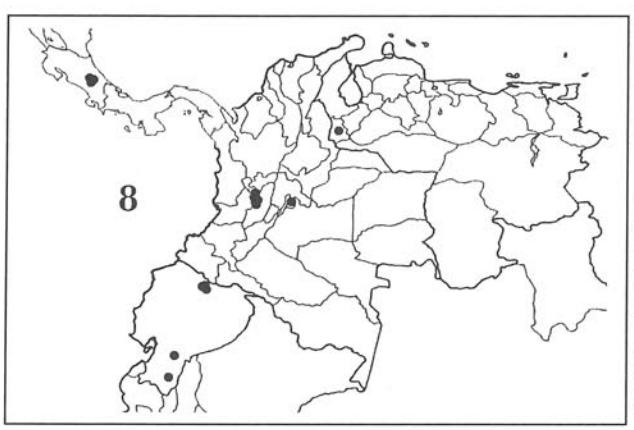
Terrestrial or epiphytic, subcaespitose, branching **herb. Roots** basal, thin. **Stem** terete, branching along the upper half, branches very short. **Leaves** numerous, distributed throughout the stems; sheaths tubular, striated and verrucose; blade ovate to narrowly lanceolate, acute, margin erose-denticulate, the leaves of the branches smaller than those of the main stem. **Inflorescence** apical, from the main stem and the branches, racemose, short, arching-nutant; sometimes with an elliptic, rounded bract near the base. **Floral bracts** triangular, acuminate, nearly as long as the ovary. **Ovary** terete, glabrous. **Flowers** 2-3, more or less successive, yellow or yellow-green. **Sepals** partly spreading, linear-lanceolate to ovate-elliptic, acute, fleshy, 3-veined, the laterals somewhat oblique. **Petals** linear, acute, 1-veined. **Lip** united to the column, suborbicular to ovate-subcordate when spread, apiculate, pubescent at the base, ecallose, embracing the column in natural position. **Column** straight, short, at a 90° angle with respect to the ovary. **Clinandrium** short, entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid. **Nectary** wide and short, without surpassing the perianth, pubescent in front of the stigmatic cavity, the pubescence directed inwards. **Capsule** subglobose, with a short pedicel, without any apical neck.

OTHER SPECIMENS: COSTA RICA: Puntarenas: Pérez Zeledon, P. I. La Amistad Cordillera de Talamanca, sendero Herradura-Uran, 3000-3080 m, 8 IV 1995, *Aguilar 3990,* INB! **San José:** Pérez Zeledón: P. N. Chirripó, Sendero a Cerro Urán, páramo límite Cartago, 3000-3200 m, 30 IV 1997, *Gamboa, 1268,* INB! **COLOMBIA: Risaralda:** Santa Rosa de Cabal, Camino Real entre Termales de Santa Rosa y Hacienda La Sierra, 3370 m, 23 II 1986, *Wolf 739*, COL! U! **Tolima:** along divide, near Quindio highway, 3300-3500 m, 17 III 1939, *Killip 34607,* AMES! US! La Linea, between Ibagüe and Armenia, 3500 m, 20 X 1982 *Luer 8495,* SEL! (Illustration voucher) Manizales und Fresno, 3100 m, 9 IV 1956, *Renz 8632*, RENZ! **ECUADOR: Carchi:** EL Pun towards Tulcán, 3200 m, 15 VII 1955, *Asplund 16841,* AMES! NY! **Zamora-Chinchipe:** Parque Nacional Podocarpus, 2800 m, 15 III 1989, *Madsen 85904,* LOJA!

OTHER RECORDS: COSTA RICA: Puntarenas: Pérez Zeledon, P. I. La Amistad Cordillera de Talamanca, sendero Herradura-Uran, 3000-3080 m, 8 IV 1995, *Aguilar 3990,* spirit and illustration, AMO! **VENEZUELA: Tachira:** Río Quinimari, in Quebrada Las Gopas, ca. 2450 m, *Dunsterville 1055,* illustration and description, xerox at AMO! **ECUADOR: Morona Santiago:** Sigsig-Chigüinda, 3281 m, 27 I 2004, *Hágsater 14046,* illustration, spirit and digital photo at AMO!

DISTRIBUTION AND ECOLOGY: Apparently widely distributed from Costa Rica to southern Ecuador, in paramo, from 2450 to 3200 m altitude, epiphytic and terrestrial. Flowering in November to August.

RECOGNITION: *Epidendrum tolimense* belongs to the Elleanthoides Group, Rhombochilum Subgroup recognized by the branching habit, small fleshy leaves and a short 3-4 flowered, nutant inflorescence on a short thick peduncle. The species is recognized by the tall overall size, the flowers yellow or yellow-green with 4 pollinia, 10-11 mm long sepals, apiculate, suborbicular to ovate-subcordate lip when spread, and the wide nectary. It is also the only species of this group in Central America. *Epidendrum rhodanthum* Hágsater & Dodson also has 4 pollinia, is somewhat smaller, sepals being 8.5 mm long, the flowers white and old rose colored, the lip is proportionately wider, and the nectary narrow. *Epidendrum chrysanthum* Hágsater & Dodson is smaller still, sepals being about 4.5 mm long, and only has 2 pollinia. *Epidendrum rhombochilum* L.O.Williams has 7-8 mm long sepals, also has two pollinia with a slit along one side. Most species in this group are found in Ecuador and neighboring areas of Colombia and Peru. *Epidendrum guacamayense* Hágsater & Dodson belongs to the Guacamayense Subgroup with branching inflorescences with long, hair-thin peduncles.



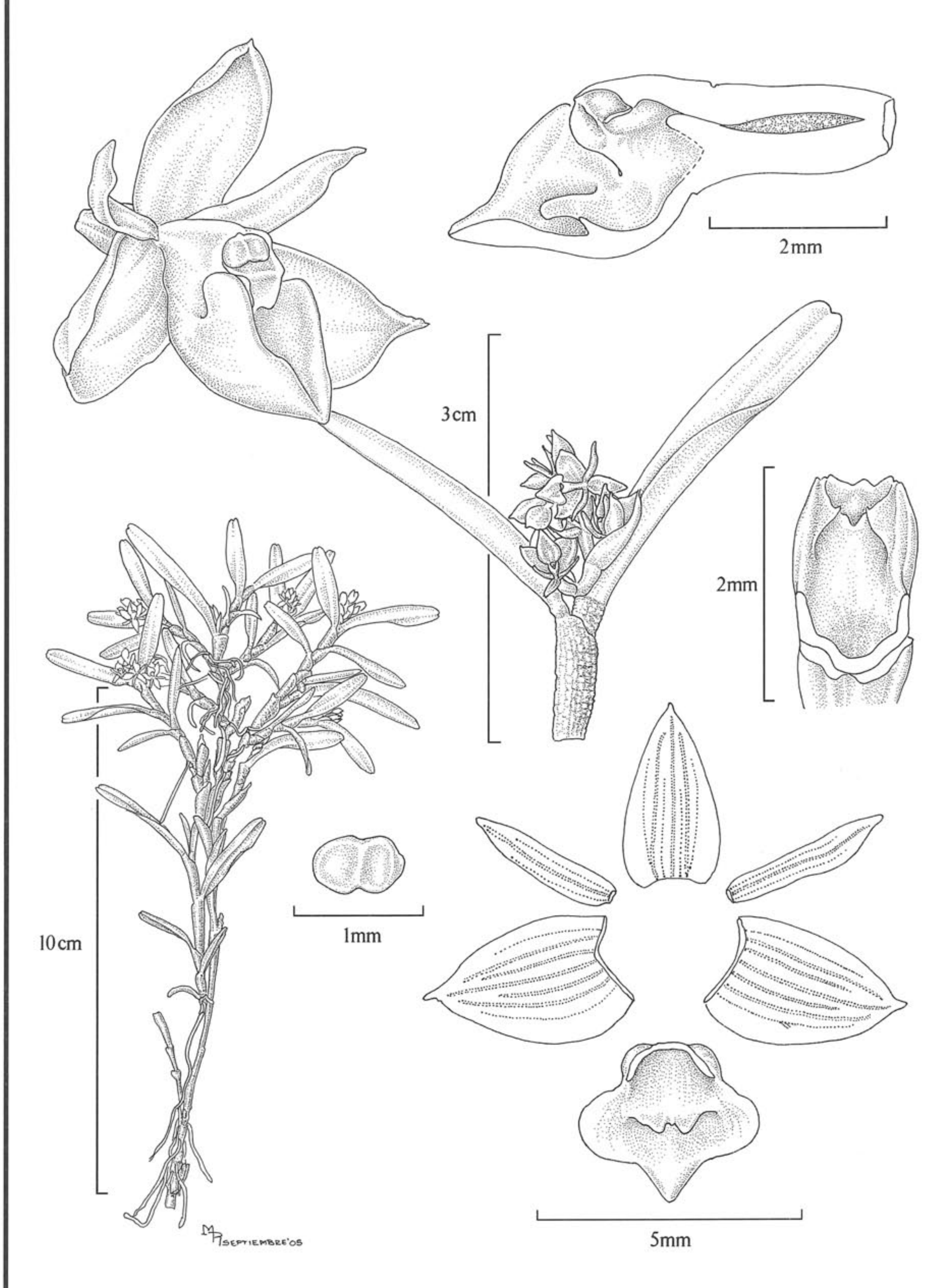
CONSERVATION STATUS: DD. Data deficient. Probably not threatened due to its occurrence in National Parks and in páramos at high elevation.

ETYMOLOGY: In reference to the Colombian province of Tolima, where the type was collected.

REFERENCES: *Epidendrum stenophyton* in Romero, G. & G. Carnevali, 2000, **Orchids of Venezuela**, 2nd ed., Caracas, pg. 303. Lankesteriana 8: 42. 2003.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**

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EPIDENDRUM TRACHYTHECE Schltr.

Plate 1188

EPIDENDRUM TRACHYTHECE Schltr., Repert. Spec. Nov. Regni. Veg. 3: 249. 1907.

Type: COSTA RICA: In den Wäldern von Pablazo [Tablazo], c. 1800 m, April 1883, ***A. Tonduz 7941.*** Holotype: B, destroyed. Neotype (here designated): COSTA RICA: [San José; Caraigres,] Tablazo, 1900 m, 30 XI 1960, ***Horich s.n.***, MO 1763399! (Illustration voucher).

Hierba epífita, monopodial, ramificada, 15-35 cm de alto. **Raíces** basales y en ocasiones de la base de las ramas, filiformes a delgadas, 0.5-1.2 mm de grosor. **Tallos** ramificados, tipo caña, teretes, cubiertos por vainas rugosas, el tallo principal 14-34 x 0.1-0.2 cm, los tallos secundarios 9-13 x 0.1-0.18 cm, las ramas florales más cortas 1.5-6 x 0.1-0.15 cm. **Hojas** más de 10 en el tallo principal, distribuidas a lo largo de éste, 2 a 3 hojas en las ramas florales, distribuidas en el tercio apical; vaina foliar tubular, rugosa, 0.5-2 cm de largo; lámina foliar articulada, linear oblonga, oblicuamente bilobada, las del tallo principal 3-4 x 0.3-0.6 cm, las de los tallo secundarios 2-3.5 x 0.3-0.5 cm, las de los tallos terciarios 1.5-2.5 x 0.3-0.4 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, tanto del tallo principal como de los secundarios y terciarios, racemosa, laxa; pedúnculo muy corto, terete, 0.8-1 mm de largo, el raquis fractiflexo. **Brácteas florales** tan largas como el ovario, conduplicadas, ovadas, obtusas, 3-3.5 x 2.8-3 mm. **Ovario** terete, no inflado, liso, 3-3.5 x 0.5-0.7 mm. **Flores** 2-6, simultáneas, dísticas, no resupinadas, verde blancuzco, en ocasiones con manchas púrpura. **Sépalos** entreabiertos, glabros, libres, ovado elípticos, agudos, margen entero, extendido, subcoriceos; el dorsal 3-nervado, ramificadas de la mitad basal, 2-3 x 1.5-2 mm, los laterales apiculados, 5-7 nervados, 2-3 x 2-2.5 mm. **Pétalos** entreabiertos, glabros, libres, linear ligulados, obtusos, 2-3 nervados, margen entero, extendido, 2-3 x 0.4-0.5 mm. **Labelo** unido a la columna, entero, transversalmente elíptico, base cuneada, ápice prominentemente apiculado, coriáceo, 1.5-2 x 2-2.5 mm; callo laminar, transversal, la lámina trilobada, los lóbulos laterales prominentes y anchos, redondeados, llegando cerca del ápice del disco, el lóbulo medio corto y agudo. **Columna** corta, recta, truncada a redondeada en el ápice, 1-1.5 mm de largo. **Clinandrio** reducido, entero. **Antera** subreniforme, 4-locular. **Polinios** 4, semiovados, caudículas suaves y granulosas, de longitud semejante a la de los polinios. **Lóbulos laterales del estigma** cortos. **Nectario** sin traspasar el perianto, amplio, no ornamentado. **Cápsula** semiovoide, sésil, cuello apical 0.4 x 0.3 mm, cuerpo 6.3 x 3.7 mm.

Epiphytic, monopodial, branching **herb. Roots** basal and occasionally from the branches, filiform to thin. **Stems** branching, cane-like, terete, covered by rugose sheaths; the main stem tall, the branches about half the length, and the floral or tertiary branches very short, produced from the secondary stems and from a subapical internode of previous tertiary stems. **Leaves** more than 10 distributed throughout the main stem, and 2-3 on the floral stems; sheaths tubular, rugose; blade articulate, linear-oblong, apex obliquely bilobed. **Inflorescence** apical from the main and secondary stems. **Floral bracts** as long as the ovary, conduplicate, ovate, obtuse. **Ovary** terete, not inflated, smooth. **Flowers** 2-6, simultaneous, non-resupinate, whitish green, sometimes with purple spots. **Sepals** spreading, glabrous, free, ovate-elliptic, acute, margin spreading, entire, subcoriaceous; dorsal sepal 3-veined, branching from the bottom half, lateral sepals 5-7 veined, apiculate. **Petals** partly spreading, glabrous, free, linear-ligulate, obtuse, 2-3 veined. **Lip** united to the column, entire, transversely elliptic, base truncate, apex prominently apiculate, coriaceous; callus transversely laminar, the lamina 3-lobed, the lateral lobes prominent and wide, rounded, reaching the disc of the lip, the midlobe short, acute. **Column** short, straight, truncate to rounded at the apex. **Clinandrium-hood** reduced, entire. **Anther** subreniform, 4-celled. **Pollinia** 4, semiovoid, caudicles soft and granulose, about as long as the pollinia. **Nectary** without penetrating the ovary, wide, with a narrow acute chamber at the bottom, smooth. **Capsule** semiovoid, sessile, with a short apical neck.

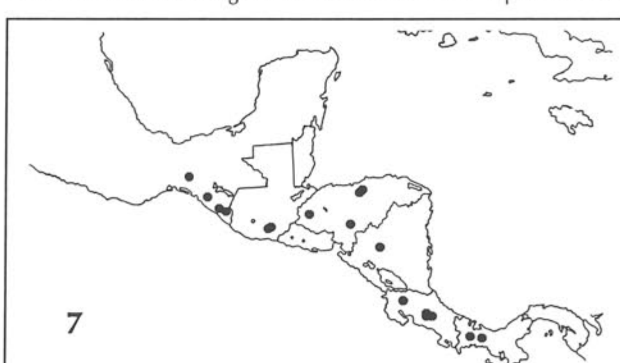
OTHER SPECIMENS: See appendix.

DISTRIBUTION AND ECOLOGY: Widely distributed and ranging from México (Oaxaca, Chiapas), Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama. Epiphyte in evergreen high forest and cloudforest, from 1250 to 2450 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum trachythece* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Rugosum Subgroup which has a branching habit with few-flowered inflorescences from short, secondary stems, the leaf-sheaths rugose. The species can be recognized by the inflorescence with 2-6 flowers, sepals widely ovate-elliptic, 2-3 mm long, 7-9-veined, tinted purple, the lip white, wider than long, entire, transversely elliptic, base truncate, apex prominently apiculate, coriaceous, and especially the transversely laminar callus, forming a 3-lobed lamina, the lateral lobes prominent and wide, rounded, reaching the disc of the lip, the midlobe short, acute. It is similar to *Epidendrum cordiforme* C.Schweinf. which has larger, 1 or rarely 2 flowers, sepals 8-10 mm long, sepals lanceolate, acute, 5-veined, lip semiorbicular-cordiform, prominently apiculate, ecallose, the disc with evident, radiating veins.

CONSERVATION STATUS: DD. Data deficient.

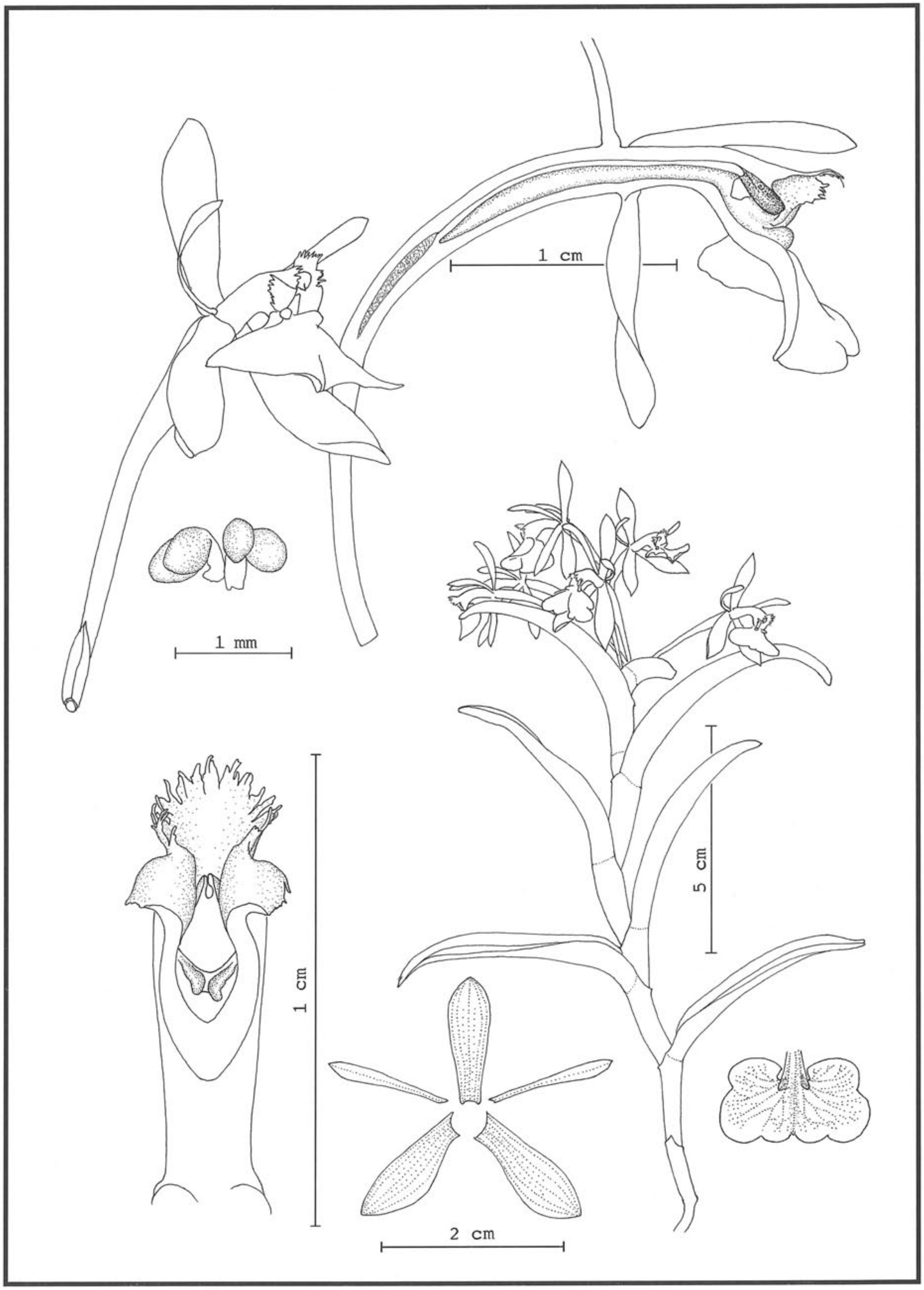
NOTE: There is a tracing at AMES of an illustration prepared from a specimen from Costa Rica: [San José:] Carpintera, ***Alexander Curt Brade s.n.*** The original was made under the supervision of R. Schlechter and was destroyed at B. The floral analysis was published in R. Mansfeld, 1930, Blütenanalysen neuer Orchideen, Repert. Nov. Spec. Regni Beih. 58: t. 58, fig. 230. The illustration of the lip suggests two globose calli, and does not show the transverse lamina which is 3-lobed and clearly pictured in the illustration here published, as well as in those published by Hamer (1982) and Mora & Atwood (1993).



ETYMOLOGY: From the Greek, τραχυς- rough, shaggy, and θηκη, container, in reference to the rugose leaf sheaths which characterize the species, and in the Rugosum Subgroup.

REFERENCES: Hamer F., 1982. *Epidendrum trachythece* Schltr. **Icon. Pl. Trop. 8**: pl. 741. Hammel et al., 2003, **Manual de Plantas de Costa Rica**, 3: p. 166, Missouri Botanical Garden. Mora, D. E. & J. T. Atwood, 1993. *Epidendrum trachythece* Schltr. **Icon. Pl. Trop. 16**: pl. 1531.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM TRIALATUM Hágsater

Plate 1189

EPIDENDRUM TRIALATUM Hágsater, Orquídea (Mexico City). 9(2): 356-358. fig. p. 359, 1984.

Type: PANAMÁ: Coclé: Valle de Antón, col. noviembre 1975, pressed cult. 7 noviembre 1981, ***Robert L. Dressler sub Eric Hágsater 4674***. Holotype: AMO! (Illustration voucher). Clonotypes: pressed cult. 20 noviembre 1982, AMO! PMA! US! pressed cult. 17 diciembre 1983, AMES! K! MO! pressed cult. 21 diciembre 1983, CR!

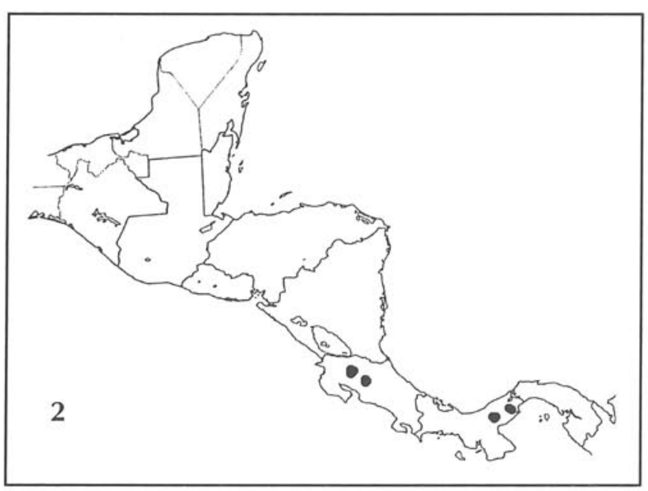
Hierba epífita, simpodial, cespitosa, 12-30 cm de alto incluyendo la inflorescencia. **Raíces** basales, carnosas, filiformes, 0.5-1 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, ligeramente en flexuoso, 8-24 x 0.2-0.4 cm. **Hojas** 4-11, distribuidas a lo largo del tallo; vaina foliar tubular, lateralmente comprimida, 1.3-3 cm de largo; lámina angostamente elípticas a liguladas, ápice retuso, coriácea, verdes, 3-10 x 0.8-1.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical en el tallo maduro, subumbelada, pedúnculo reducido. **Bráctea floral** mucho más corta que el ovario, triangular, aguda, 3-6 x 1.2-1.5 mm. **Flores** 3-6, simultáneas, abriendo en sucesión, resupinadas, blanco verdosas, generalmente con los ápices de los sépalos y pétalos de color verde, especialmente en el botón; fragancia dulce durante todo el dia. **Ovario** terete, el tercio apical algo inflado ventralmente, no ornamentado, 22-38 x 1.3-1.8 mm. **Sépalos** libres, extendidos, obovados oblanceolados, ápice obtuso a agudo, coriáceos, glabros, 5-nervados, con algunas nervaduras secundarias, margen entero, extendido, 12-16 x 5-6.5 mm; los laterales oblicuos. **Pétalos** libres, extendidos, angostamente oblanceolados a linear oblanceolados, ápice obtuso a agudo, membranáceos, 1-nervados, margen entero, extendido, 13-14 x 0.6-1.2 mm. **Labelo** unido a la columna, transversalmente rectangular reniforme, base cordada, en ocasiones con un seno poco profundo a cada lado, apicalmente emarginado y formado de dos lobos redondeados incipientes, 6.5-10 x 11-15 mm; bicalloso, los callos alargados, redondeados, divergentes. **Columna** arqueada hacia el ápice, delgada, 6-10 x 1.6-2 mm, con un par de procesos petaloides laterales laminares, dentado fimbriados, revolutos. **Clinandrio** prominente, cónico, márgen fimbriado. **Antera** subesférica, 4-locular. **Polinios** 4, subesféricos, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, semejantes al largo de los polinios; viscidio viscoso, translúcido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, hasta la mitad de la cavidad estigmática. **Nectario** profundo, penetrando un tercio de la longitud del ovario, angosto, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, filiform. **Stems** simple, cane-like, laterally compressed, slightly flexuous. **Leaves** 4-11, distributed throughout the stem; sheath tubular, laterally compressed; blade narrowly elliptic to ligulate, coriaceous, green, apex unequally bilobed. **Inflorescence** apical, from the mature stem, subumbellate, peduncle reduced. **Floral bract** much shorter than the ovary, triangular, acute. **Flowers** 3-6, simutlaneous, opening in succession, resupinate, greenish white with the apices of the sepals and petals generally green, especially when in bud; fragrance sweet, throughout the day. **Ovary** terete, ventrally somewhat inflated along the apical third, smooth. **Sepals** free, spreading, obovate-oblanceolate, apex obtuse to acute, coriaceous, glabrous, 5-veined, with secondary veins, margin entire, spreading; the lateral sepals oblique. **Petals** free, spreading, narrowly oblanceolate to linear-oblanceolate, apex obtuse to acute, membranaceous, 1-veined, margin entire, spreading. **Lip** united to the column, transversely rectangular-reniform, base cordate, occasionally with a shallow sinus on each side, apically emarginate and forming two shallow, rounded lobes; bicallose, the calli elongate, rounded, divergent. **Column** arching towards the apex, thin, with a pair of apical petaloid, dentate-fimbriate, revolute processes. **Clinandrium-hood** prominent, surpassing the column, funnel-shaped, margin deeply fimbriate. **Anther** subsphaerical, 4-celled. **Pollinia** 4, subsphaerical, laterally compressed, subequal; caudicles soft and granulose, about as long as the pollinia; viscidium viscous, translucent. **Rostellum** apical, slit. **Nectary** deep, penetrating 1/3 of the ovary, narrow, smooth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Known from rather local populations in Nicaragua, Costa Rica (El Arenal) and Panama, at 485-1100 m altitude, in deciduous forest and low forests. Flowering from November to February.

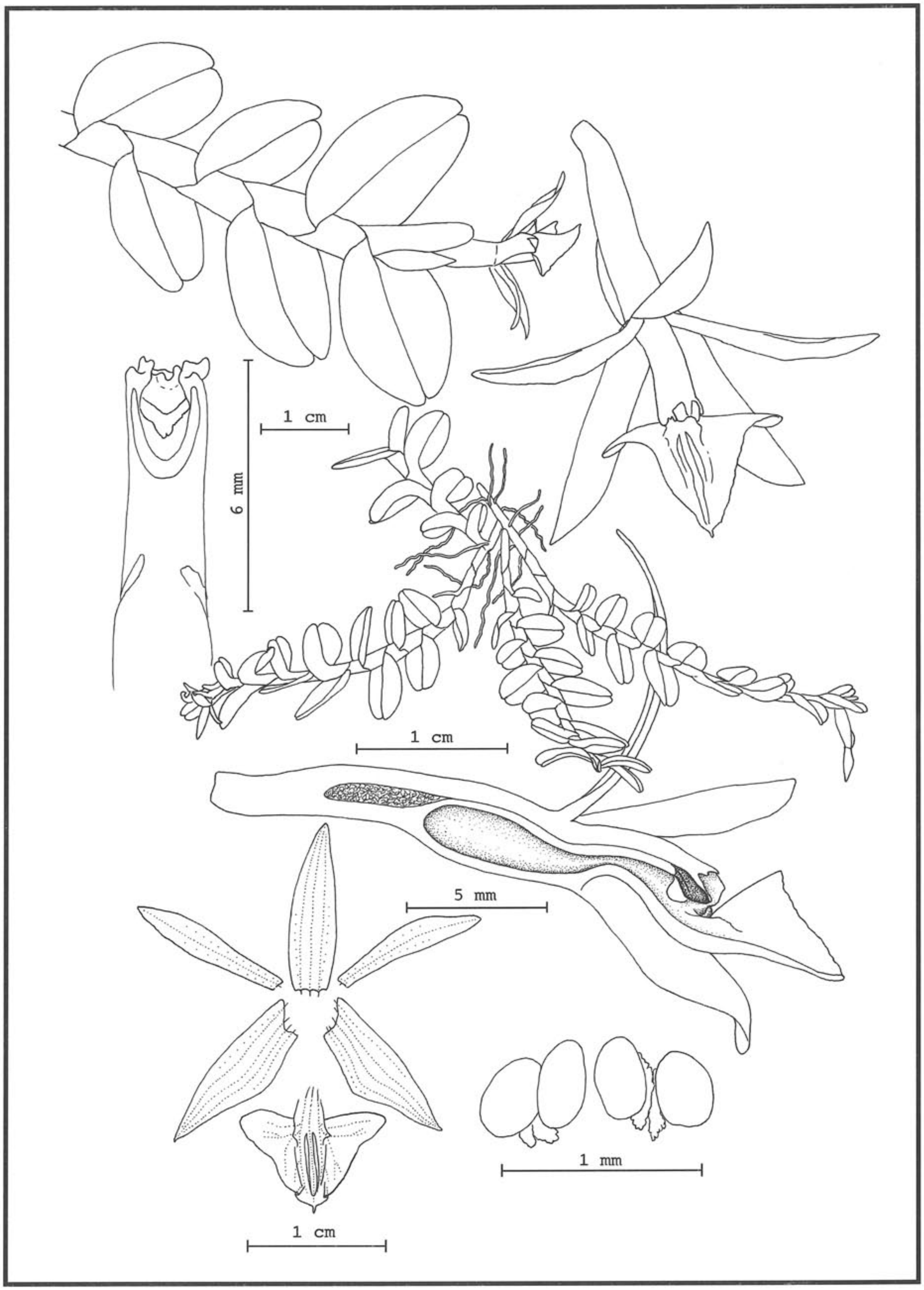
RECOGNITION: *Epidendrum trialatum* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green rarely white flowers. The species can be recognized by the laterally compressed stems, narrowly elliptic to ligulate leaves, 3-6, greenish white flowers, 1-veined petals, a rectangular-reniform lip, and especially the apex of the column with 3, dentate-fimbriate petaloid processes. *Epidendrum firmum* Rchb.f. has more delicate plants, smaller, greenish flowers, and a 3-lobed lip with a quadrate midlobe.



CONSERVATION STATUS: DD. Data deficient. Apparently common along the Pacific slope of Costa Rica and Panama.

ETYMOLOGY: From the Latin *tri*, three, and *ala*, wing, in reference to the three fimbriate, petaloid processes at the apex of the column.

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EPIDENDRUM TRIANGULABIUM Ames & C.Schweinf.

Plate 1190

EPIDENDRUM TRIANGULABIUM Ames & C.Schweinf., Schedul. Orchid. 10: 75. 1930.

Type: COSTA RICA: Guanacaste: La Tejona, North of Tilarán, 600-700 m, 25 January 1926, ***Paul C. Standley and Juvenal Valerio 45970.*** Holotype: AMES! Isotype: US!

Hierba epífita, monopodial, prostrada, de 8-15 cm de alto. **Raíces** basales, escasas, muy delgadas, blancas, 0.4-0.8 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados hacia el ápice, produciéndose de los entrenudos basales de tallos anteriores, rectos, 7-15 x 0.1-0.5 cm; cubiertos en la base por vainas tubulares no foliares, 7-9 mm de largo. **Hojas** 9-16, tipo *Dichaea*, en hileras opuestas con las láminas en un mismo plano del tallo y orientadas hacia arriba, subextendidas; distribuidas a lo largo del los tallo, articuladas, dísticas, cartáceas; vainas tubulares, finamente estriadas, ligeramente rugosas; lámina elíptica, ápice obtuso, desigualmente bilobado, diminutamente apiculado, margen entero, extendido, 1.3-2.6 x 0.6-1.3 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, uniflora, florece una sola vez, subsésil; pédunculo con una bráctea, oblongo lanceolada, ápice oblicuamente redondeado, conduplicada, 17 mm de largo. **Bráctea floral** más pequeña que el ovario, oculta por la bráctea basal del pedúnculo. **Flores** 1, no resupinada, de color verde claro, concolora, sin datos de fragancia. **Ovario** terete, delgado, no ornamentado, algo inflado en la mitad apical, 11 mm de largo. **Sépalos** subextendidos, libres, lanceolados, acuminados, 5-nervados, margen entero, extendido, 11.5-12.7 x 3.1-4 mm; los laterales oblicuos, ligeramente convexos. **Pétalos** extendidos, libres, linear oblanceolados, acuminados, 3-nervados, oblicuos, margen entero, extendido, 11.2-11.5 x 2.1 mm. **Labelo** unido a la columna, en aspecto general anchamente triangular-sagitado, incipientemente trilobado, recurvado en la base y extendido en el ápice, margen ligeramente eroso, 6-7.5 x 9.2-10.5 mm; bicalloso, los callos laminares, algo divaricados; disco bicuniculado (entre los callos y la quilla central) y tricarinado, las carinas bajas, desvaneciéndose en el seno apical de la lámina; lóbulos laterales oblicuamente subtriangulares, 4.2 x 3 mm; lóbulo medio anchamente triangular, diminutamente apiculado, 4.8 x 6.6 mm. **Columna** delgada, ligeramente arqueada, 6-7 mm de largo. **Clinandrio** corto, con el margen tridentado. **Antera** no vista. **Polinios** 4, subglobosos; caudículas suaves y granulosas, ligeramente más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando más de la mitad de la cavidad estigmática. **Nectario** penetrando ½ del ovario, inflado detrás del perianto, liso. **Cápsula** elipsoide; un pedicelo, delgado, 3 mm de largo; cuerpo 17 x 8 mm, cuello apical, muy corto, con el perianto persistente.

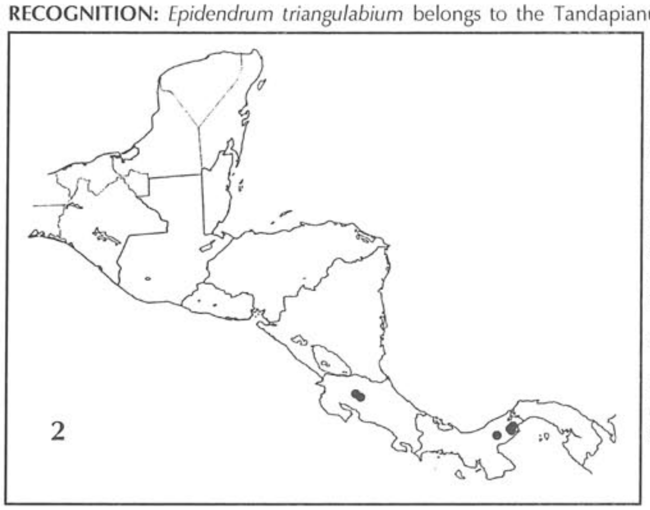
Epiphytic, monopodial, caespitose, prostrate, **herb. Roots** basal, scarce, very thin, white. **Stems** simple, cane-like, terete at the base, laterally compressed towards the apex, produced from the basal internodes of the earlier stems, straight, short; covered at the base of tubular, non-foliaceous sheaths. **Leaves** 9-16, *Dichaea*-like, 2-ranked, facing upwards and the blade parallel to the stem, spreading, distributed throughout the stems, articulate, distichous, chartaceous, subspreading; sheaths tubular, minutely striated, slightly rugose when dry; blade elliptic, apex obtuse, unequally bilobed, minutely apiculate, margin entire, spreading. **Inflorescence** apical, single-flowered, flowering only once, subsessile; peduncle with a single, oblong-lanceolate, rounded, conduplicate, long bract. **Floral bract** shorter than the ovary, hidden within the basal bract of peduncle. **Flower** 1, non-resupinate, light green, concolor. **Ovary** terete, thin, smooth, somewhat inflated ventrally along the apical half. **Sepals** spreading, free, lanceolate, acuminate, 5-veined, margin entire, spreading; the lateral sepals oblique, slightly convex. **Petals** spreading, free, linear-oblanceolate, acuminate, 3-veined, oblique, margin entire, spreading. **Lip** united to the column, widely triangular-sagittate, slightly 3-lobed, base recurved, apex spreading, margin slightly erose; bicallose, the calli laminar, somewhat divaricate; disc bicuniculate (between the calli and the central keel), tricarinate, the keels low, disappearing in the apical sinus; lateral lobes obliquely subtriangular; midlobe widely triangular, minutely apiculate. **Column** thin, slightly arching. **Clinandrium-hood** short, margin tridentate. **Pollinia** 4, subglobose; caudicles soft and granulose, slightly longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating ½ of the ovary, inflated behind the perianth, smooth. **Capsule** ellipsoid, pedicel thin and short, apical neck short, perianth persistent.

OTHER SPECIMENS: COSTA RICA: Guanacaste: El Silencio, near Tilaran, ca. 750 m, 13 I 1926, *Standley 44825*, AMES! **PANAMA: Coclé:** Vicinity of El Valle, 600-1000 m, 1 IX 1940, *Allen 1245*, MO! Hills north of El Valle de Antón, 2-5 IX 1964, *Dressler 2943*, AMES! F! LL! MEXU! US! **Panamá:** Near top of Cerro Campana, 800-1000 m, 1 IX 1940, *Allen 2223*, AMES!

OTHER RECORD: PANAMA: Coclé: El Copé, *Dressler sub Hágsater 6298*, slide and spirit, AMO! (Illustration voucher).

DISTRIBUTION AND ECOLOGY: Known only from western Costa Rica, and central Panama; epiphyte, from 600 to 1000 m altitude. Flowering September to January.

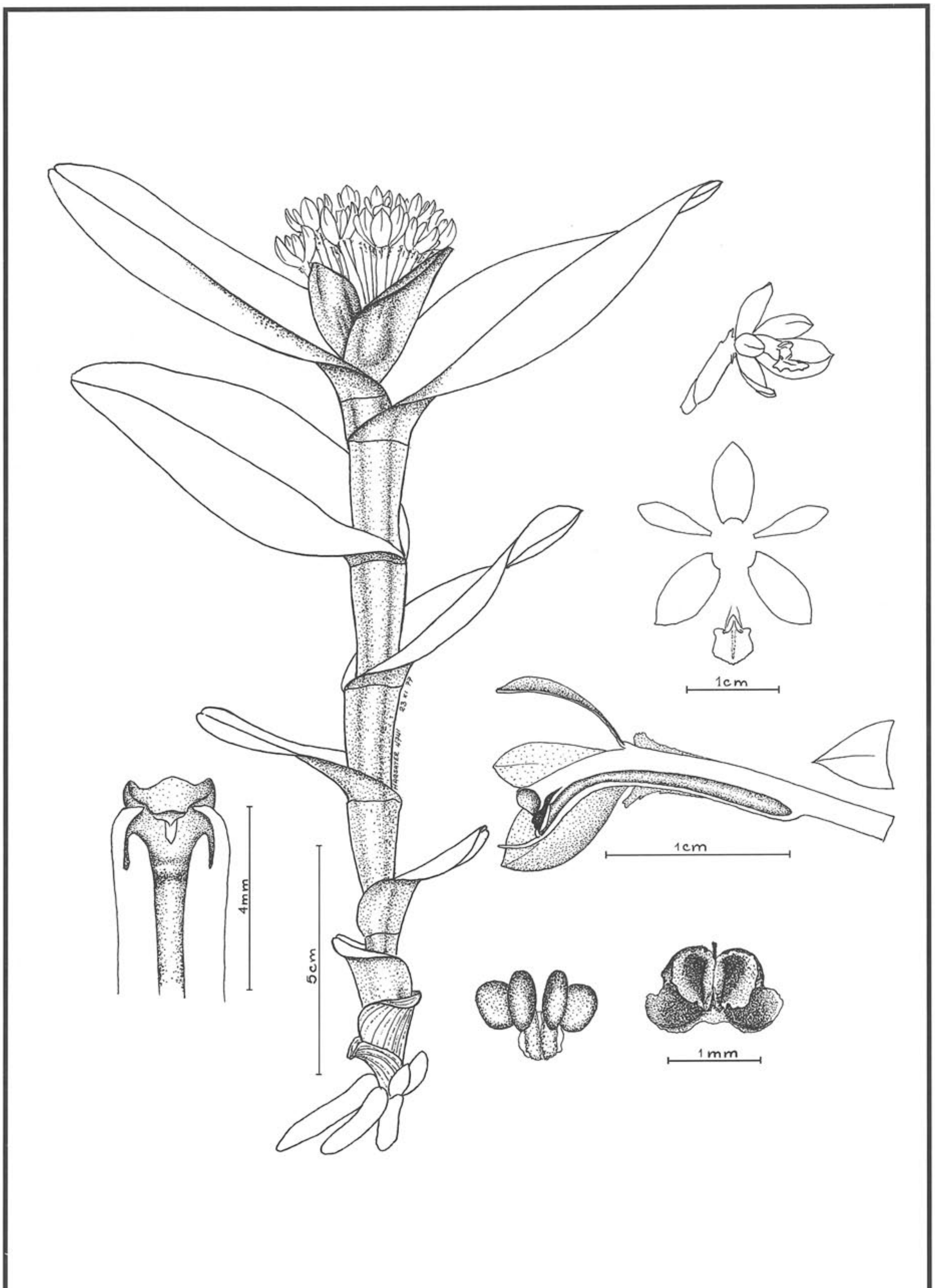
RECOGNITION: *Epidendrum triangulabium* belongs to the Tandapianum Group, which is recognized by the subcaespitose habit, the 2-ranked leaves facing one side of the stem, and the inflorescence producing single flowers, with a large triangular, bicallose lip. The species is recognized by the short, prostrate stems (to 15 cm tall) covered by elliptic, bilobed leaves, the single-flowered, apical inflorescence, the flower green, concolor, with lanceolate, acuminate sepals 11.5-12.7 mm long, and the widely triangular-sagittate lip, somewhat recurved at the base. *Epidendrum tandapianum* Dodson & Hágsater has taller, erect, plants, longer, linear-elliptic leaves, an elongate inflorescence producing successive single flowers over a long period, and somewhat similar flowers, the sepals about 18-20 mm long.



CONSERVATIO STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *triangularis*, 3-cornered, and *labium*, liped, in reference to the 3-cornered lip which distinguishes this species.

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Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM TRIANTHUM Schltr.

Plate 1191

EPIDENDRUM TRIANTHUM Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 296. 1923.

Type: COSTA RICA: Umgebung von San Ramón, im Jahre 1921, ***G. Acosta s.n.*** Holotype: B (destroyed). Lectotype (here designated): tracing of sketch of plant and flower made under the supervision of R. Schlechter, AMES 31638!

Synonym: *Epidendrum nagelii* L.O.Williams, Amer. Orch. Soc. Bull. 10(4): 103. 1941. Type: MEXICO: Guerrero: Mt. Marandillas [Barandillas] near Sto. Domingo, north of Atoyac, mountain system of Teotepec, 1200-1400 m, 3 August 1936, ***Nagel 2063.*** Holotype: AMES 52405!

Hierba epífita o litófita, simpodial, cespitosa, erecta, 12-30 cm de alto. **Raíces** basales, delgadas. **Tallos** sencillos, tipo caña, teretes muy en la base y lateralmente aplanados, ancipitosos, erectos a ligeramente arqueados, 9-27 x 0.2-10 cm; cubiertos en base por 2-5 vainas, infundibuliformes, anchamente ovadas al extenderse, conduplicadas, falcado-recurvadas, 1.8-4.0 x 0.5-1.6 cm. **Hojas** 3-11, distribuidas a lo largo del tallo, subextendidas, articuladas, dísticas, desiguales en tamaño, (las basales algo más pequeñas); vainas infundibuliformes, finamente estriadas, ancipitosas, 13-32 x 4.0-12 mm; lámina elíptica a elíptico-lanceolada, conduplicada en la base, obtusa a subaguda en el ápice, angostamente bilobada, subcoriácea, margen entero, ligeramente revoluto, 3.5-11 x 1.5-3.8 cm. **Brácteas espatáceas** 2-3, anchamente ovadas al extenderse, redondeadas, amplexicaules, conduplicadas, ancipitosas, 16-32 mm de largo. **Inflorescencia** apical, racemosa, subumbelada, florece una sola vez, erecta, densa, corta, 3.5-6.5 cm de largo; pedúnculo lateralmente aplanado, ancipitoso, bialado, erecto, recto, corto, 1-2 cm de largo, frecuentemente oculto por la hoja apical y por las brácteas espatáceas; raquis muy corto. **Brácteas florales** más cortas que el ovario, triangulares, acuminadas, abrazadoras, 3-8 mm de largo. **Ovario** terete, delgado, engrosado a lo largo de la mitad apical, con alas longitudinales, dentadas justo detrás de los segmentos florales, 14-22 mm de largo. **Flores** 3-24, simultáneas, resupinadas, carnosas, de color verde con la superficie dorsal difuminada de púrpura rosado; sin fragancia. **Sépalos** parcialmente extendidos, libres, subredondeados, diminutamente apiculados, 9-nervados, margen entero, algo revoluto en la mitad basal, 7.0-13 x 4.0-5.5 mm; el dorsal elíptico obovado; los laterales elípticos a elíptico obovados. **Pétalos** extendidos, libres, espatulados, ápice subredondeado, 7-nervados, margen entero, algo revoluto en la mitad basal, 7-12 x 2.0-4.0 mm. **Labelo** unido a la columna, entero, subrómbico, en forma de escudo, auriculiforme en forma general, ligeramente convexo, cordado en la base, obtuso y diminutamente apiculado en el ápice, margen eroso, 3.0-6.0 x 3.5-5.0 mm; bicalloso, los callos lateralmente aplanados, paralelos; disco provisto de 3 quillas, bajas, el par lateral más corto, la central alargada hasta el ápice de la lámina. **Columna** recta, delgada, el ápice con un par de dientes subtriangulares, 5-7 mm de largo. **Clinandrio** prominente, sobrepasando ligeramente el ápice de la columna, margen diminutamente dentado. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, algo más largas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes. **Nectario** penetrando 2/3 del ovario, ligeramente inflado, liso. **Cápsula** elipsoide, cuerpo 20 x 8 mm; pedicelo 14 mm de largo; cuello apical obsoleto.

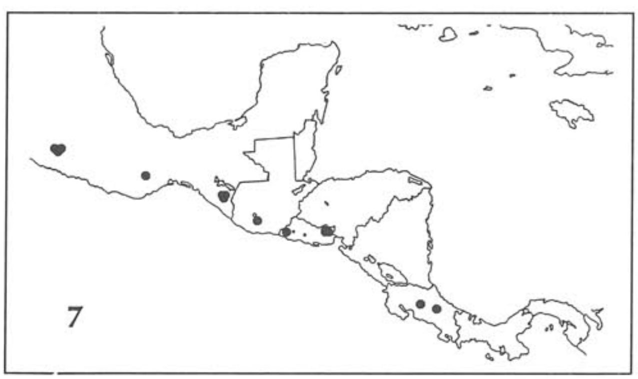
Epiphytic or lithophytic, sympodial, caespitose, erect **herb. Roots** basal, thin. **Stems** simple, cane-like, the base terete, the rest of the stem laterally compressed, ancipitose, erect to slightly arching; covered near the base by 2-5 infundibuliform, widely ovate, conduplicate sheaths, somewhat falcate-recurved. **Leaves** 3-11, distributed throughout the stem, somewhat spreading, articulate, distichous, subequal; sheaths infundibuliform, minute striated, ancipitose; blade elliptic to lanceolate-elliptic, base conduplicate, apex obtuse to subacute, narrowly bilobed, subcoriaceous, margin entire, slightly revolute. **Spathaceous bracts** 2-3, widely ovate when spread, rounded, conduplicate, ancipitose, large. **Inflorescence** apical, racemose, subumbellate, flowering only once, erect, dense, short; peduncle laterally compressed, ancipitose, two-winged, erect, straight, short, covered by the spathaceous bracts. **Floral bracts** shorter than the ovary, triangular, acuminate. **Ovary** terete, thin, thickened along the apical half, with longitudinal, dentate wings just behind the perianth. **Flowers** 3-24, simultaneous, resupinate, fleshy, green, the sepals dorsally tinged with purple-pink. **Sepals** partly spreading, free, somewhat rounded, minutely apiculate, 9-veined, margin entire, somewhat revolute along the basal half; the dorsal sepal elliptic-obovate, the lateral sepals elliptic to elliptic-obovate. **Petals** spreading, free, spatulate, apex somewhat rounded, 7-veined, margin entire, the basal half somewhat revolute. **Lip** united to the column, entire, subrhombic, shield-like, auriculate in general outline, slightly convex, base cordate, apex obtuse and minutely apiculate, margin erose; bicallose, the calli laterally compressed, parallel, disc with 3 low keels, the outer pair shorter, the mid-keel reaching the apex of the blade. **Column** straight, thin, with a pair of triangular teeth at the apex. **Clinandrium-hood** prominent, slightly surpassing the body of the column, margin minutely dentate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, somewhat longer than the pollinia. **Rostellum** apical, slit. **Nectary** penetrating 2/3 of the ovary, slightly inflated, smooth. **Capsule** ellipsoid, pedicel short, apical neck obsolete.

OTHER SPECIMENS: MEXICO: Guerrero: Camino Paraiso-El Gallo, km 59, pressed cult. 26 IV 1980, *Hágsater 4733*, AMO x2! Camino Atoyac-El Gallo km 59, arriba de Paraíso, 30 XII 1976, pressed cult. 17 IX 1978, *Hágsater 4734*, AMO! Ibid. 16 IX 1978, *Hágsater 4735*, AMO! Ibid. ca. 1300 m, VI 1978, *Hágsater 4736*, AMO! Ibid. 1 V 1988, *Hágsater 4736*, AMO! Ibid. 23 XI 1977, *Hágsater 4741*, AMO! (Illustration voucher, xerox copy, MEXU!) Ibid. 26 IV 1980, *Hágsater 4741*, AMO! Camino Atoyac-El Gallo, km 54, ca. 1400 m, pressed cult. 23 VIII 1982, *Hágsater 4779*, AMO! Teotepec-system-Mt Piloncillo (Ometepeji) N of Atoyac, 1200 m, 10 I 1933, *Nagel 1909*, AMO! Ibid. 1400 m, 24 IX 1934, AMES! MO! SEL! Ibid. 1 XII 1934, AMES! Ibid. 5 IX 1936, CAS! S! SEL! Ibid. 10 IX 1936 US! Tlacotepec, Nueva Delhi, ca km 70 del camino Atoyac-Xochipala, 1400 m, 3 XI 1983, pressed cult. 5 X 1983, *Salazar 17*, AMO! **Chiapas:** El Triunfo, pressed cult. 21 XI 1996, *Todsen CS-OR 3 sub Hágsater 11769*, AMO! Siltepec, 1 1937, *Matuda s.n.*, AMES! **GUATEMALA:** Without locality data, 29 XII 1955, *Norvell s.n.*, AMES! **Guatemala:** Sta Elena, Barillas-Villa Canales, cerca Lago Amatitlan, pressed cult. XI 1979, *Dix sub Hágsater 5351*, AMO! **EL SALVADOR:** Without locality data, Hort. AMO, pressed cult. 17 IX 1978, *Hamer sub Hágsater 4707*, AMO! Ibid. 21 X 1978, *Hamer sub Hágsater 4707*, AMO! **Morazán:** Perquín-Zabanetas, 1600 m, 23 III 1967, *Pank 186*, SEL! **San Miguel:** Cerro Cacaguatique, 1400 m, 16 IV 1969, *Hamer 186*, AMO! MO! **Sonsonate:** **[Ahuachapán:]** Cumbre del caballo (Tacuba), 1000 m, *Pank 968*, F! **COSTA RICA: Cartago:** Sabanillas de Acosta by road side Las Cóncavas, ca. 3500 ft, IX 1928, *Lankester 1217*, AMES!

OTHER RECORDS: MEXICO: Guerrero: Camino Atoyac-El Gallo, km 59, arriba de Paraíso, *Hágsater 4734*, slide, AMO! Ibid. *Hágsater 4735*, slide and color photo by E. Hágsater, in M. Soto et al., 2007, Las Orquídeas de México, Digital Catalogue: fig. 0419, México, Instituto Chinoín, AMO! **Oaxaca:** Juquila Mixes, Miller, III 1967, *Pollard R-40*, b/w photographs, AMO! **Chiapas:** km 15.1 del camino de la carretera Huixtla-Motozintla a Libertad Calera, cerca del Bremen, 1300 m, 28 III 1997, *Soto 8275*, color photo by M. Soto, in M. Soto et al., 2007, Orchids of Mexico, Digital Catalogue: fig. 0418, México, Instituto Chinoín, AMO! **GUATEMALA:** Without locality data, *Tinschert s.n*, slide, AMO! Without locality, only indicated as Region 5 (Humid Region), *Behar s.n.*, color photo published in Guatemala y sus Orquídeas, p. 143. **El Salvador:** Carretera Troncal del Norte, antes de llegar a La Palma, km 72, 1000 m, *Hamer 186*, xerox copy of illustration, AMO!

DISTRIBUTION AND ECOLOGY: Widespread but rare, in Mexico (Guerrero, Oaxaca, and Chiapas), Guatemala, El Salvador, and Costa Rica; epiphytic in crowns of trees in wet forest, between 1000-1600 m altitude. Flowering from August to October; in cultivation from November to May.

RECOGNITION: *Epidendrum trianthum* belongs to the Loefgrenii Group which is characterized by the sympodial, caespitose plants, apical, subumbeliform inflorescence subtended by prominent, wide, truncate spathaceous bracts, and the ovary with an inflated nectary that forms a vesicle. The species has erect plants, with large, conduplicate, ancipitose spathaceous bracts, green flowers, the sepals dorsally tinged with purple-pink, the ovary slightly inflated with longitudinal, dentate wings behind the perianth. The species seems to have some vegetative similarities with *Epidendrum phyllocharis* Rchb.f., sharing the ancipitose stems and the short two-winged peduncle of the apical inflorescence, and the wide, conduplicate spathaceous bracts at the apex of the peduncle; the floral bracts however are very different. The Brazilian, pendent species like *Epidendrum vesicatum* Lindl., with the glaucous vegetative parts, are superficially similar in the subumbeliform inflorescence, and the general shape of the flowers.

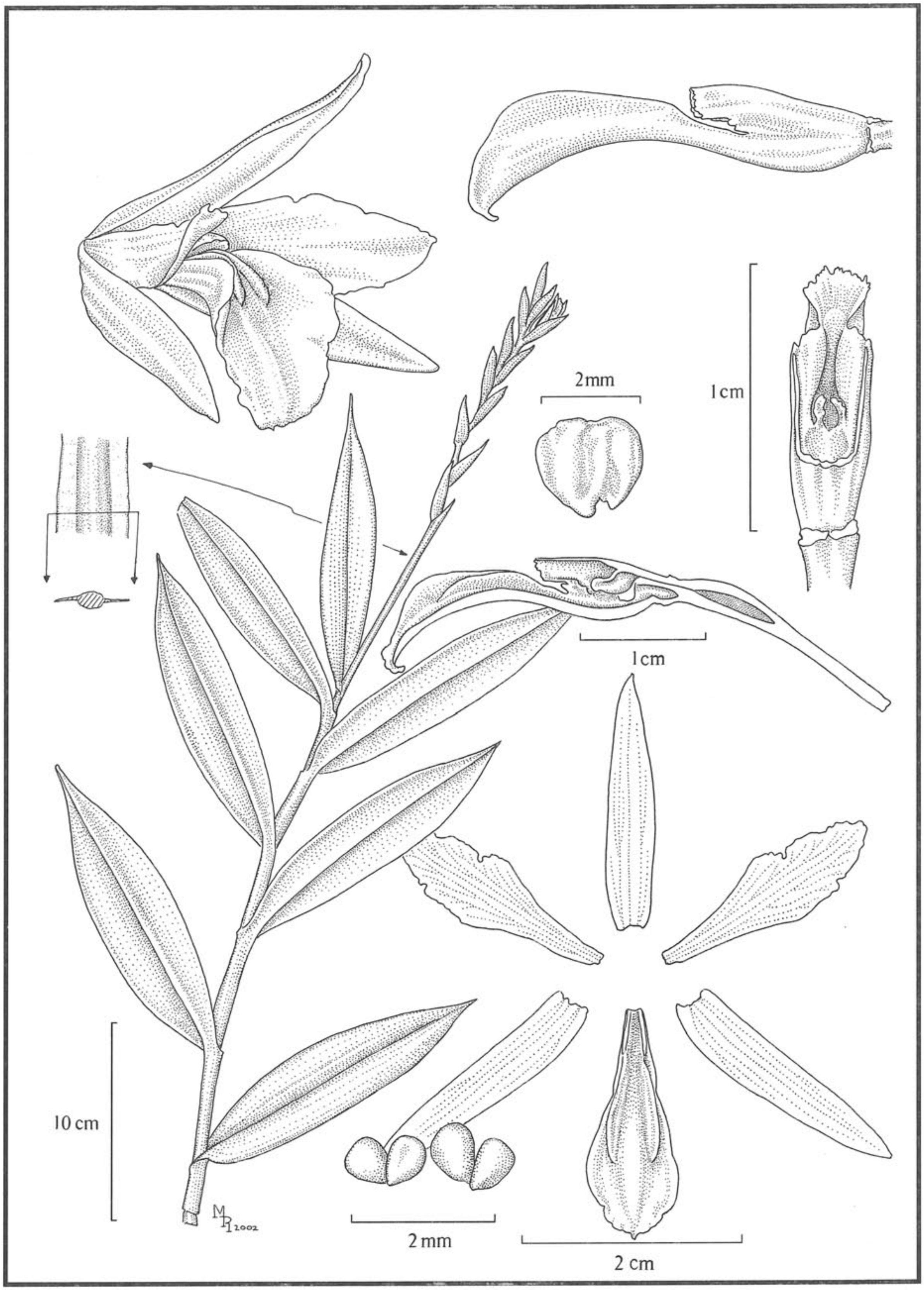


CONSERVATION STATUS: DD. Data deficient. Rare, found in the crown of high trees, and therefore usually only seen on recently fallen branches.

ETYMOLOGY: From the Greek τρις, three, and ανφος, flower, or three-flowered, bcause the original collection used by Schlechter to describe the species only had three flowers.

REFERENCE: Behar, M. and O. Tinschert, 2000, **Guatemala y sus *Orquídeas*,** p. 143; Hamer, F., 1974, **Las Orquídeas del Salvador Vol. 1.** Ministerio de Educación. San Salvador: 228-229; Soto, M. et al., 2007, **Orchids of Mexico**, Digital Catalogue: fig. 0418-0419, México, Instituto Chinoín; Williams, L. O., 1951, **The Orchidaceae of Mexico**, p. 154.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM TROPIDIOIDES Garay **Plate 1192**

EPIDENDRUM TROPIDIOIDES Garay, Bot. Mus. Leafl. 26(1): 26. 1978.

Type: COLOMBIA: Putumayo: 5 km NE of Sibundoy, 2760 m, 28 November 1962, ***M. L. Bristol 388.*** Holotype: AMES 114353! Isotypes: AMES! COL! US!

Hierba terrestre, erecta, de 180 cm de alto. **Raíces** producidas e lo largo de algunos entrenudos basales del tallo, delgadas. **Tallos** sencillos, tipo caña, lateralmente aplanados (por lo menos hacia el ápice), de más de 50 x 0.45-0.8 cm. **Hojas** 16, distribuidas a lo largo del tallo, alternas; vaina tubular, lateralmente aplanada, estriada, 3-5 x 0.45-0.8 cm de largo; lámina elíptica a lanceolada, cortamente acuminada, margen entero, 15-20 x 2.2-4.0 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa, alargada, erecta, 15-23 cm de largo; pedúnculo alargado, recto, prominentemente bialado, 9-13 x 0.5 cm, con una bráctea en el ápice, semejante a las florales. **Brácteas florales** tanto o mas largas como el ovario, angostamente ovadas, oblicuas, agudas, conduplicadas, las basales no imbricadas, las apicales ligeramente imbricadas en la base, 15-38 x 3.5-6.5 mm. **Ovario** terete, liso, inflado en la mitad apical de la superficie dorsal, 15-18 mm de largo. **Flores** 11, sucesivas, se desarrolla una a la vez, resupinadas, de color verde, sin datos de fragancia. **Sépalos** entreabiertos, libres, angostamente lanceolados, agudos, 3-nervados, las nervaduras laterales ramificadas desde la base dando la apariencia de ser 5-nervados, margen entero, extendido, 22-26 x 4.2-5.2 mm. **Pétalos** paralelos con respecto a la columna en la mitad basal, arriba extendiéndose, libres, angostamente rómbicos, subagudos, 3-nervados, las nervaduras laterales muy ramificadas hacia la mitad apical, margen entero en la mitad basal, eroso arriba, 21-23 x 6-9 mm. **Labelo** unido a la columna, entero, unguiculado en la base, ápice obtuso, diminutamente apiculado, revoluto, margen ligeramente ondulado en el ápice, 16 x 8 mm; bicalloso, los callos laminares, delgados, alargados hasta la mitad de la lámina. **Columna** recta, 10 mm de largo, incluyendo el clinandrio. **Clinandrio** prominente, más largo que el cuerpo de la columna, margen apical diminutamente dentado. **Antera** anchamente ovoidea, 4-locular. **Polinios** 4, obovoides. **Rostelo** a la mitad de la columna, hendido. **Lóbulos laterales del estigma** de 1/3 de largo de la cavidad estigmática. **Nectario** sin traspasar el perianto, no inflado, liso. **Cápsula** no vista.

Terrestrial, erect **herb. Stems** simple, cane-like, laterally compressed (at least above). **Leaves** 16, distributed throughout the stem, sheath tubular, laterally compressed, striated; blade elliptic, short acuminate, margin entire. **Inflorescence** apical, racemose, elongate, erect; peduncle elongate, straight, prominently two-winged, with a bract at the apex, similar to the floral bracts. **Floral bracts** as long or longer than the ovary, narrowly ovate, oblique, acute, conduplicate. **Ovary** terete, smooth, somewhat dorsally inflated along the apical half. **Flowers** 11, successive, one developing at a time, resupinate, green. **Sepals** partly spreading, free, narrowly lanceolate, acute, 3-veined, the lateral veins branching from the base so as to appear 5-veined, margin entire, spreading. **Petals** parallel to the column at the base, then spreading, free, narrowly rhombic, subacute, 3-veined, the lateral veins much branched towards the apical half, margin entire along the basal half, erose above. **Lip** united to the column, entire, unguiculate at the base, apex obtuse, minutely apiculate, revolute, margin slightly undulate towards the apex; bicallose, the calli laminar, thin, elongate, reaching the middle of the lip. **Column** straight. **Clinandrium-hood** prominent, longer than the body of the column, margin minutely dentate. **Anther** widely ovoid, 4-celled. **Pollinia** 4, obovoid. **Rostellum** in the middle of the column, slit. **Nectary** short, not penetrating the ovary.

OTHER SPECIMENS: PERU: Amazonas: Luya, Camporedondo, Tullanya, base Cerro Huicsocunga, Pascana "La Palma", 2710 m, 8 XII 1996, *Díaz 8875* AMO! (Illustration voucher) USM! **Huánuco:** San Pedro de Carpish, Ruta Paty, al lado derecho de la carretera Hco-TM, a más o menos 200 m antes de OPTYMA, 29 III 2003, *Trujillo 125*, Herb. Univ. Ricardo Palma!

OTHER RECORDS: PERU: Huánuco: San Pedro de Carpish, Ruta Paty, 29 III 2003, *Trujillo 125*, xerox of illustration and color photo, AMO!

DISTRIBUTION AND ECOLOGY: On the eastern slope of the Andes in southern Colombia, and from the Cordillera Oriental in northern Peru, just east of the Marañón river, in wet montane forest, at 2710-2760 m altitude. Flowering in November to March.

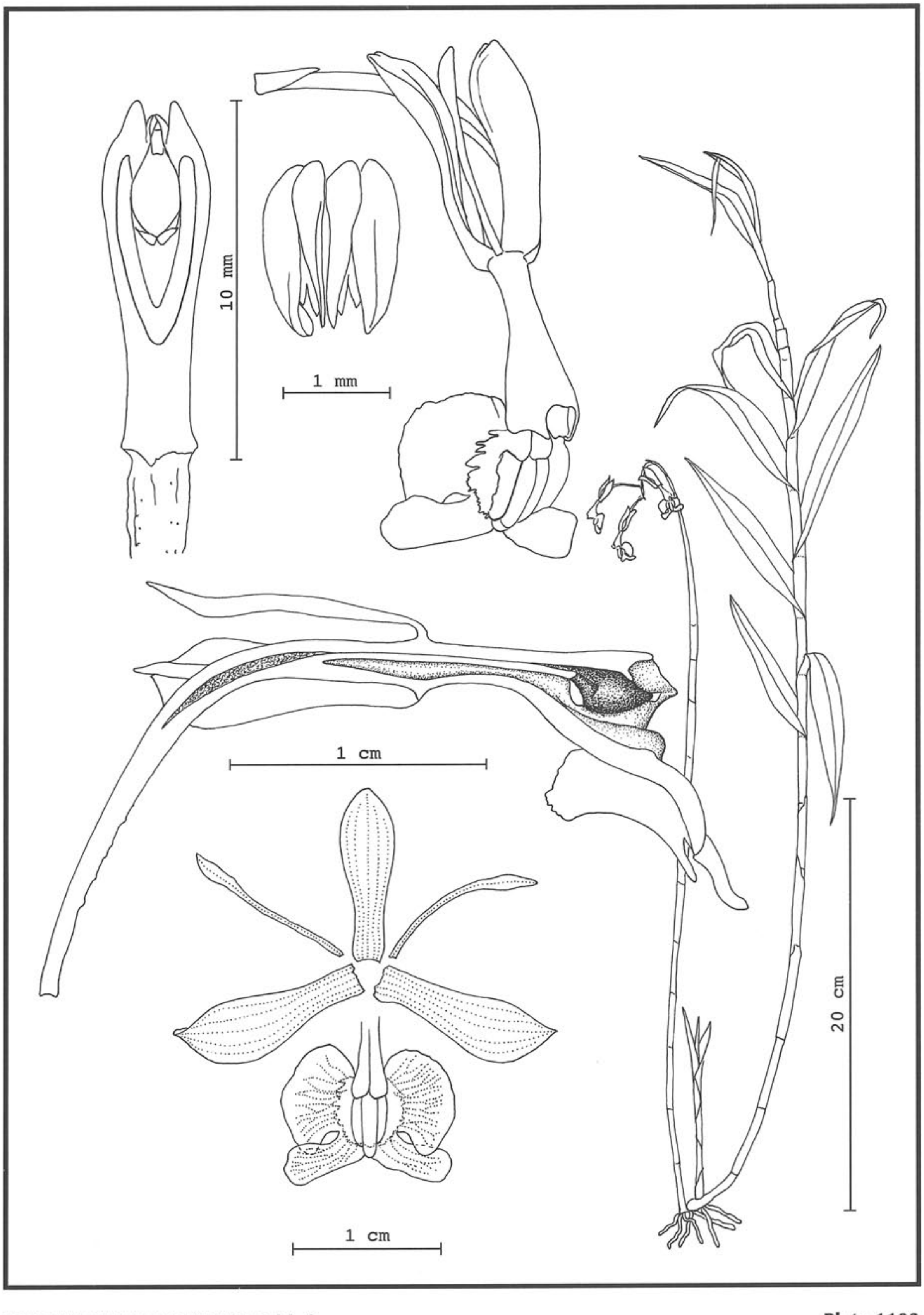


RECOGNITION: *Epidendrum tropidioides* belongs to the Allenii Subgroup of the Albertii Group, which is characterized by having a caespitose habit, simple stems, an apical inflorescence with the peduncle elongate, two-winged, bare, not covered by bracts. The species has very large plants, up to 1.8 m tall; leaves around 15-20 x 2.2-4 wide peduncle, large flowers, the sepals 22-23 mm long, the petals rhombic and the lip cuneate, with the apex widely rounded, and two very long laminar keels, the clinandrium hood much surpassing the body of the column with the apical margin minutely dentate. It is somewhat similar to *E. aristatum* Ackerman & Montalvo, which has a somewhat smaller habit, smaller, aristate floral bracts, linear petals, and a reniform, emarginate, revolute lip with a pair of short, flattened prominent calli, forming an arch together with the clinandrium in front of the column. *Epidendrum puyoënse* Hágsater & Dodson has smaller plants, sepals 8-10 mm long, oblanceolate-spatulate petals, and the orbicular lip slightly longer than the clinandrium-hood, with two small calli.

CONSERVATION STATUS: DD. Data deficient. The species is apparently very rare, and found only in undisturbed, wet montane forests.

ETYMOLOGY: The floral bracts are said to remind the observer of the genus *Tropidia* Lindl.

Authors: E. Santiago & E. Hágsater **Illustrator: M. López R.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM TURIALVAE Rchb.f.

Plate 1193

EPIDENDRUM TURIALVAE Rchb.f., Gard. Chron. 1871: 1678. 1871, based on *Epidendrum n.sp.?*, Reichenbach f. in Beitr. Orchid.-K. C. Amer.: 85-86. 1866.

Type: COSTA RICA: Cartago: Turrialba, 24 III 1857, ***Hermann Wendland 539.*** Lectotype (here designated): W 49580!, with the 2 flowers and sketch [with description] mounted on W 49579! Paratype: COSTA RICA: San José: Carmiol, ***Wilson Saunders 2124.*** W 49581! With the 2-leaved fragment and label, mounted on W 49579! Drawing of the flowering plant W 82226! The tracing AMES 26937 [HUH barcode 70963]! is a composite drawing of the Reichenbach sketch of the flower and lip of *Wendland 539*, and the plant with the flowers of the separate inflorescence of *Saunders 2124* mounted on W 49581.

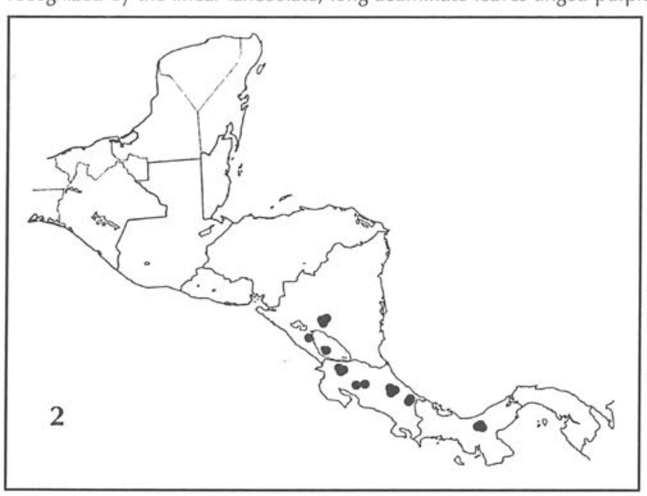
Hierba epífita, simpodial, cespitosa, 33-85 cm de alto. **Raíces** basales, carnosas, delgadas, 0.5-1.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base y lateralmente aplanados hacia el ápice, delgados, erectos, rectos, 21-47 x 0.13-0.44 cm. **Hojas** 9-14, distribuidas a lo largo del tallo, articuladas, alternas, teñidas de morado en el envés; vainas tubulares, lateralmente aplanadas, ancipitosas, finamente estriadas, 1-4 x 0.2-0.6 cm; lámina linear lanceolada, largamente acuminada, con una quilla dorsal baja, gramínea, margen entero, [2.5] 7-18.5 x 0.4-1.5 [1.8-2.5] cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, elongada, erecta, racemosa, subcorimbosa, produciendo racimos nuevos (durante varios años) del mismo pedúnculo y por lo tanto pluriracemosa, plurianual, pauciflora, 9-21 cm de largo; pedúnculo delgado, ancipitoso, recto a ligeramente fractiflexo, 8-20 cm de largo, provisto de 6-7 brácteas, que lo cubren casi totalmente, tubulares, algo ancipitosas, agudas, de tamaño decreciente, en ocasiones las basales parcialmente imbricadas, 1-8.5 cm de largo; raquis filiforme, corto, recto a arqueado, 1.5-2.5 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, agudas, abrazadoras, 1-3 mm de largo. **Ovario** terete, delgado, algo papiloso, no inflado, 16-25 mm de largo. **Flores** 3-5, simultáneas, colgantes, resupinadas, de color verdoso, los sépalos algo teñidos de color pardo purpúreo en la superficie dorsal, el labelo blanco, translúcido, en ocasiones con una mancha (de tamaño variable) de color púrpura o amoratada sobre del disco, los callos verdes o teñidos de púrpura; sin fragancia. **Sépalos** reflexos, libres, oblanceolados a espatulados, agudos, diminutamente apiculados, algo cóncavos hacia el ápice, 5-nervados, carnosos, margen entero, extendido, 10-13.5 x 3.5-4.5 mm; los **laterales** algo oblicuos. **Pétalos** reflexos, libres, linear filiformes, ensanchados hacia el ápice, agudos, 1-nervados, margen entero, extendido, 10-12 x 1 mm. **Labelo** unido a la columna, 3-lobado, algo convexo, cordado en la base, margen extendido, 6-10 x 9-11.5 mm; bicalloso, los callos delgados, paralelos; disco provisto de 3 quillas paralelas, agudas, muy carnosas, que recorren todo el disco hasta el seno apical de la lámina; lóbulos laterales dolabriformes, margen algo eroso, 5 x 6 mm; lóbulo medio bilobado, los lóbulos linear oblongos, truncados, divaricados y falcados, margen entero, 4.2 x 9.4 mm. **Columna** delgada, recta, el ápice con un par de dietes laterales, triangulares, prominentes, 9-10 mm de largo. **Clinandrio** reducido (la antera expuesta casi en su totalidad), margen entero. **Antera** ovoide, con una quilla dorsal baja, 4-locular. **Polinios** 4, tipo "ala de pájaro", fuertemente comprimidos lateralmente; caudículas laminares, algo más cortas que los polinios. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** muy pequeños, de ¼ del largo de la cavidad estigmática. **Nectario** corto, apenas penetrando el ovario, no inflado, liso. **Cápsula** no vista.

Epiphytic, sympodial, caespitose **herb. Roots** basal, fleshy, thin. **Stems** simple, cane-like, terete at the base, laterally compressed, above, thin, erect, straight. **Leaves** 9-14, distributed throughout the stem, articulate, alternate, the underside tinged purple; sheaths tubular, laterally compressed, ancipitose, minutely striated; blade linear-lanceolate, long-acuminate, with a low dorsal keel, grass-like, margin entire. **Inflorescence** apical, elongate, straight, racemose, subcorymbose, producing new racemes over several years from the apex of the peduncle, and thus pluri-racemose, each raceme few-flowered, the peduncle long, about as long as the apical leaf, thin, ancipitose, straight, nearly totally covered by 6-7 tubular, acute bracts, rachis filiform, short, straight, arching-nutant. **Floral bracts** much shorter than the ovary, narrowly triangular, acute. **Ovary** terete, thin, somewhat papillose, not inflated. **Flowers** 3-5, simultaneous, pendent, resupinate, greenish, the sepals somewhat dorsally tinged purple-brown, the lip white, translucent, sometimes with a purple blotch (variable in size) over the disc, the calli green or tinged purple. **Sepals** reflexed, free, oblanceolate to spatulate, acute, minutely apiculate, the somewhat concave towards the apex, 5-veined, fleshy, margin entire, spreading, the lateral sepals somewhat oblique. **Petals** reflexed, free, linear-filiform, widened towards the apex, acute, 1-veined, margin entire, spreading. **Lip** united to the column, 3-lobed, somewhat convex, base cordate, slightly wider between the apical lobes; margin spreading; bicallose, the calli thin, parallel; disc provided with 3 parallel, very fleshy, acute keels that run down to the apical sinus; lateral lobes dolabriform, margin somewhat erose; midlobe bilobed, the lobes linear-oblong, truncate, divaricate and falcate, margin entire. **Column** thin, straight, with a pair of prominent, lateral, triangular, teeth at the apex. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, with a low dorsal keel, 4-celled. **Pollinia** 4, "bird-wing" type, strongly laterally compressed; caudicles laminar, somewhat shorter than the pollinia. **Rostellum** apical, slit. **Nectary** short, barely penetrating the ovary, not inflated, smooth.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Restricted to Nicaragua, Costa Rica and Panama along the Atlantic slope, 80 to 1200 m altitude. Flowering from June to October, December to February.

RECOGNITION: *Epidendrum turialvae* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, and Turialvae Subgroup which has a racemose and few-flowered inflorescence on an elongate peduncle, usually producing new racemes over the years and thus pluriracemose. The species is recognized by the linear-lanceolate, long acuminate leaves tinged purple on the underside, the elongate, few-flowered, subcorymbose inflorescence, the flowers greenish with the lip a transparent white, sometimes with a purple blotch over the disc. *Epidendrum antonense* Hágsater from central Panama is vegetatively very similar, but the flowers are olive-green with the smaller, very fleshy lip intense, solid purple. *Epidendrum tacarcunense* Hágsater from the Darién has much larger plants (to 130 cm tall), with acuminate, 7-16 mm long floral bracts and the petals parallel to the column not reflexed.



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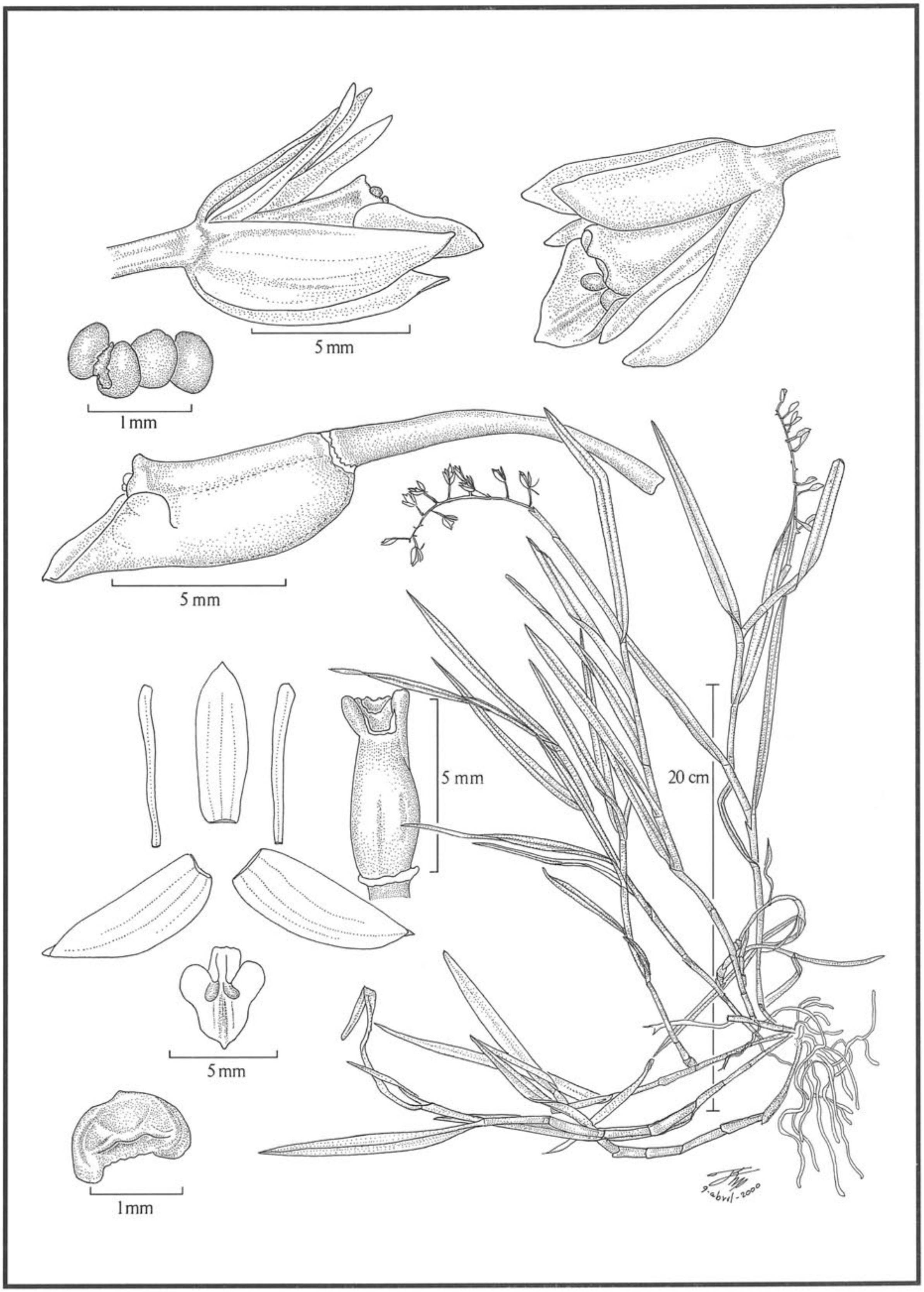
CONSERVATION STATUS: DD. Data deficient. The species is widespread throughout its range.

ETYMOLOGY: In reference to the city of Turrialba, Costa Rica, near which it was originally collected.

REFERENCES: Hamer F., 1982. *Epidendrum turialvae* Rchb.f., in F. Hamer, **Orchids of Nicaragua**, in Dodson, C. H., *ed.*, **Icon. Pl. Trop.** 8: pl. 742. The Marie Selby Botanical Gardens. Sarasota, FL. Hamer F., 2001. *Orchidaceae* Juss., in Stevens, W. D. et al., *eds.*, **Flora de Nicaragua** 85(2): 1695. Missouri Botanical Garden Press, St. Louis, Missouri, U.S.A.

Authors: E. Santiago & E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater & L. Sánchez S.**

Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM VENTRICOSUM Lindl. **Plate 1194**

EPIDENDRUM VENTRICOSUM Lindl., in Hook. Journ. Bot. 3: 86. 1841.

Type: PERU: without locality, ***Mathews 1869***, Holotype: K! Fragment: W! Sketch: W!

Hierba epífita, simpodial, subcespitosa, 15-33 cm de alto. **Raíces** basales, carnosas, delgadas, blancas, 0.3-0.6 mm de grosor. **Tallos** sencillos, delgados, tipo caña, suberectos, lateralmente aplanados, el nuevo producido de cerca de la base del tallo anterior, 10-21 x 0.2-0.33 cm. **Hojas** 3-6, distribuidas en la mitad apical del tallo, las basales más pequeñas; vaina tubular, lateralmente aplanada, finamente estriada, 1.7-2.7 x 0.2-033 cm; lámina linear lanceolada, aguda, diminutamente apiculada, margen apical ligeramente crenulado, erecta, subcoriácea, 4.0-12.3 x 0.3-0.8 cm. **Brácteas espatáceas** 1-2, tubulares, oblongas, conduplicadas, ancipitosas, subagudas, hasta 6.0 x 0.2-0.3 cm. **Inflorescencia** apical, racemosa, arqueada 10-14.5 cm de largo; pedúnculo delgado, alargado, lateralmente aplanado, ligeramente arqueado, no ornamentado, cubierto casi en su totalidad por las espatas, 4.0-8.0 cm de largo; raquis delgado, lateralmente aplanado, 6.2-6.5 cm de largo. **Brácteas florales** mucho más cortas que el ovario, triangulares, agudas, 1.4-2.2 mm de largo. **Ovario** terete, no ornamentado, dilatado hacia el ápice, 6-10 x 0.8-0.9 mm. **Flores** 8-13, simultáneas, resupinadas, de color rosado fuerte, sin datos de fragancia. **Sépalos** entrecerrados, libres, oblongo elípticos, 3-nervados, margen entero, 7.2-8.4 x 2.4-2.9 mm; el **dorsal** subredondeado, diminutamente apiculado; los **laterales** oblicuos, agudos, con una quilla dorsal baja. **Pétalos** entrecerrados, libres, lineares, ensanchados en el ápice, redondeados, 1-nervados, margen entero, 7.5 x 0.6 mm. **Labelo** unido a la columna, entero, profundamente cordado triangular, diminutamente apiculado en el ápice, margen entero, tan largo como ancho, 3.9 x 3.9 mm; bicalloso, los callos subglobosos, ligeramente divaricados, provisto de tres venas engrosadas en la superficie del disco. **Columna** levemente dirigida hacia arriba en el ápice, ventralmente muy inflada, 5 mm de largo. **Clinandrio** corto, margen irregular. **Antera** suborbicular, 4-locular. **Polinios** 4, lenticulares. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** no vistos. **Nectario** una cámara ámplia formada por la unión de la columna y el labelo, sin penetrar el ovario. **Cápsula** no vista.

Epiphytic, sympodial, subcaespitose, **herb. Roots** basal, thin. **Stems** simple, cane-like, suberect, laterally flattened, the new stem produced from near the base of the previous stem. **Leaves** 3-6, distributed throughout the apical half of the stem; sheath tubular, laterally compressed, minutely striated; blade erect, subcoriaceous, linear-lanceolate, acute, minutely apiculate, apical margin slightly crenulate, the lower ones smaller. **Spathaceous bracts** 1-2, tubular, oblong, conduplicate, ancipitose, subacute. **Inflorescence** apical, racemose, somewhat arching. **Floral bracts** much shorter than the ovary, triangular, acute. **Ovary** terete, dilated towards the apex. **Flowers** 8-13, simultaneous, resupinate, rich pink colored. **Sepals** slightly spreading, free, oblong-elliptic, 3-veined, margin entire; dorsal sepal minutely apiculate; lateral sepals oblique, acute, with a low apical keel. **Petals** slightly spreading, linear, widened towards the rounded apex, 1-veined, margin entire. **Lip** united to the column, entire, deeply cordate, triangular, apex minutely apiculate, margin entire, lip over all as wide as it is long; bicallose, the calli subglobose, slightly divaricate, disc with three thickened keels. **Column** slightly arched upwards towards the apex, much inflated ventrally. **Clinandrium-hood** short, margin irregular. **Anther** reniform, 4-celled. **Pollinia** 4, lentil-shaped. **Rostellum** subapical, slit. **Nectary** a widely thickened chamber formed by the union of the column and the lip; it does not penetrate de ovary.

OTHER SPECIMENS: Perú: Amazonas: Bongará; Hills west-northwest (310°-320°) of Pomacocha, 2300-2700 m, 24 VI 1962, *Wurdack 919*, US! (Illustration voucher).

DISTRIBUTION AND ECOLOGY: Endemic to Peru, known presently only from the northern end of the Cordillera Oriental, east of the Marañón, north of Chachapoyas, between 2300 and 2700 m altitude. Flowering in June.

RECOGNITION: *Epidendrum ventricosum* belongs to the Mancum Group, Ventricosum Subgroup, characterized by the sympodial habit, few, narrow leaves, racemose inflorescence subtended by 1-2 narrow, spathaceous bracts, and the delicate, purple flowers with an inflated nectary on the underside of the column, the lip laminar and more or less cordate. The species is recognized by the subcaespitose habit, medium sized plants with ancipitose stems, narrow spathe and racemose inflorescence with rich pink colored, translucent flowers; the leaves are long and narrow (4-12 x 0.3-0.8 cm), the lip is as wide as it is long, and the calli are small, about ¼th the length of the lip, and is found north of Chachapoyas, in the hills NW of lake Pomacocha. *Epidendrum pachygastrium* Kraenzlin is very similar and is distinguished by the shorter, wider lanceolate leaves (3-8 x 0.6-1.0 cm), and the lip slightly wider than long and with the two large, subglobose calli nearly half as long as the lip; it is found around Chachapoyas and south. *Epidendrum leimebambense* Hágsater, which also grows south of Chachapoyas and up to Loja in Ecuador, is also similar, but leaves are still wider, up to 1.7 cm wide, flowers larger, sepals 14-16 mm long, pale green marked with purple, and lip cordiform, 8 x 11 mm.



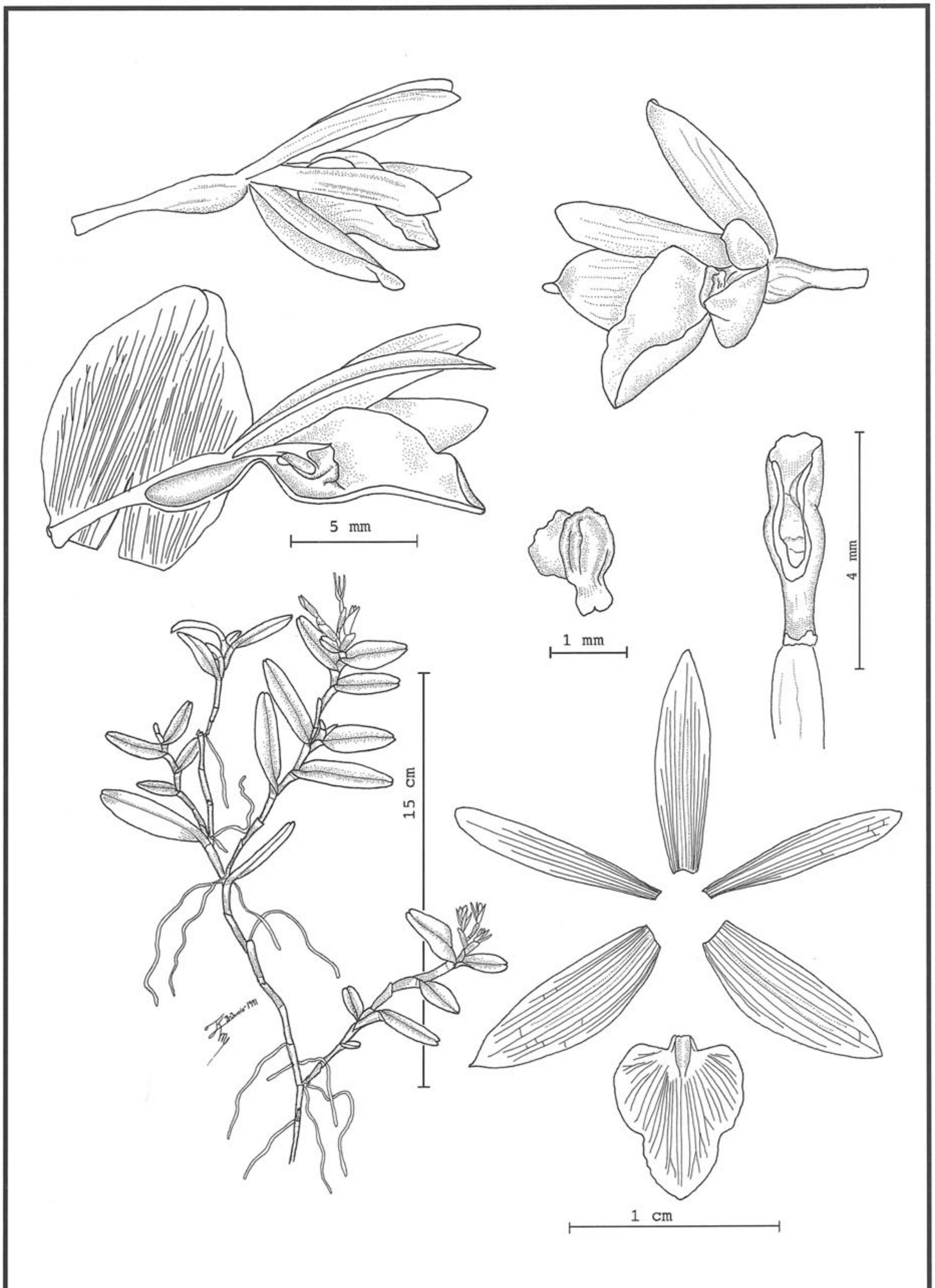
NOTE: The species was incorrectly reported from Ecuador by Dodson (1999) on the basis of *Spruce 5956*. That collection has recently been identified as *Epidendrum calyptratoides* Hágsater & Dodson.

CONSERVATION STATUS: DD. Data deficient. The species appears to be very narrowly distributed.

ETYMOLOGY: Derived from the Latin *ventricosus*, swollen, belly, in reference to the swollen underside of the column which forms a belly.

REFERENCES: Dodson, C. H. 1999. *Orchidaceae* in Jørgensen, P. M. & S. León-Yáñez. Catalogue of the Vascular Plants of Ecuador. **Monographs in Systematic Botany from the Missouri Bot. Gard.** 75: 668.

Author: E. Hágsater | **Illustrator: R. Jiménez M.** | **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM VERAGUASENSE Hágsater **Plate 1195**

EPIDENDRUM VERAGUASENSE Hágsater, Orquídea (México City) 12(2): 286.1992.

Type: PANAMA: Veraguas: Along steep trail to summit of Cerro Tute, ca. 3 km above Escuela Agricultura Alto Piedra near Santa Fé, 3000-3100 ft, 4 January 1981, ***K. Sytsma & T. Antonio 3046.*** AMO! (Illustration voucher.) Isotype: MO!

Hierba epífita, monopodial, de tallos rastreros, 11-30 cm o más de largo. **Raíces** producidas cerca de los nudos basales de los tallos y de la base de las ramas, delgadas, < 1 mm de grosor. **Tallos** tipo caña, sinuosos, teretes, el principal 12-16 x 0.1-0.2 cm, difícil de identificar, generalmente tiene unas 6 hojas semejantes, ligeramente mayores a las de las ramas; ramificaciones 3-8 x 0.1-0.2 cm, producidas de diversos nodos del tallo principal, principalmente los subapicales, las ramificaciones a su vez producen una nueva rama del nodo subapical. **Hojas** alternas, distribuidas a todo lo largo de tallos; vaina tubular, estriada (en seco), hasta 1.7 cm de largo; láminas angostamente elíptico ovadas, subcoriáceas, lisas, ápice bilobado, margen entero; 5-8 en el tallo principal, semejantes de tamaño excepto la inferior y la apical, [15]36-48 x [5] 9-13 mm; 2-5 en las ramas, generalmente desiguales, especialmente la inferior y la apical, 9-38 x 4-11 mm. **Bráctea espatácea** ausente. **Inflorescencia** apical, del tallo principal y de las ramas, florece una sola vez, sencilla, dística, 2.5-3.5 cm de largo, raquis apenas visible entre las brácteas, sinuoso, liso, con una bráctea hacia la base del pedúnculo, más pequeña que las florales. **Brácteas florales** conduplicadas, prominentes, ligeramente más largas que el ovario, ovadas al extenderse, 10-12.5 mm de largo. **Flores** simultáneas, 2-3, blancas, la nervadura media de los sépalos laterales roja hacia el ápice; fragancia no registrada. **Ovario** inflado en la mitad apical para formar una vesícula prominente; 8-12 mm de largo. **Sépalos** entreabiertos, libres, agudos, quilla dorsal apical poco elevada, aristados, glabros, subcoriáceos, aparentemente 5-nervados en la base, los nervios laterales subdivididos cerca de la base de manera que parecen 12-nervados arriba, margen entero extendido, 11-12 x 2.5-3.8 mm, el dorsal angostamente elíptico, los laterales angostamente ovados a lanceolados. **Pétalos** entreabiertos, linear subespatulados, redondeados, membranáceos, aparentemente 3-nervados en la base, los nervios laterales subdivididos de manera que parecen 7-nervados al centro, margen extendido, 10-11 x 1.7-2 mm. **Labelo** unido a la columna, triangular ovado, base ligeramente cordada, constreñido pasada la mitad, ápice redondeado, subcoriáceo, 8 x 6 mm; bicalloso, los callos muy delgados, laminares. **Columna** ligeramente arqueada, gruesa, 3.5 mm de largo. **Clinandrio** prominente, entero, margen sinuoso. **Antera** obovoide, cóncava con un seno en el ápice, con un par de procesos petaloides apicales, prominentes, 4-locular. **Polinios** 4, semiovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas; viscidio semilíquido, transparente. **Lóbulos laterales del estigma** prominentes, de 1/2 de largo de la cavidad estigmática. **Nectario** prominente, penetrando 1/2 del ovario, y formando una vesícula detrás del periantio, liso. **Cápsula** no vista.

Epiphytic, monopodial, creeping **herb. Roots** produced from the basal internodes of the main stem and branches. **Stems** cane-like, sinuous, terete, somewhat longer than the branches, generally with 6 similar leaves, branches from the subapical internodes, and these producing new branches from subapical nodes. **Leaves** alternate, distributed throughout the stems; sheaths tubular, striated (when dry); blades narrowly elliptic-ovate, subcoriaceous, smooth, apex bilobed, margin entire, the leaves of the branches unequal and smaller than those of the main stem. **Inflorescence** apical, from the main stem and branches, flowering only once, simple, distichous; rachis barely visible between the floral bracts, sinuous, smooth, with a bract at the base of the peduncle. **Floral Bracts** conduplicate, prominent, slightly longer than the ovary, ovate when spread. **Flowers** simultaneous, 2-3, white, the mid-vein of the lateral sepals rod towards the apex, **Ovary** inflated along the apical half, forming a prominent vesicle, **Sepals** partly spreading, free, acute, aristate, dorsal keel slightly elevated, glabrous, subcoriaceous, 5-veined at the base, then branching and 12-veined, margin entire, spreading; dorsal sepal narrowly elliptic, lateral sepals ovate to lanceolate. **Petals** partly spreading, linear-spatulate, rounded, membranaceous, 3-veined at the base, branched and 7-veined above, margin spreading. **Lip** united to the column, triangular-ovate, base slightly cordate, constricted above the middle, apex rounded, subcoriaceous; bicallose, the calli very thin, laminar. **Column** slightly arching, thick. **Clinandrium-hood** prominent, entire, margin sinuous. **Anther** obovoid, concave with an apical sinus and a pair of prominent, apical, petaloid processes; 4-celled. **Pollinia** 4, semiovoid, laterally compressed, subequal; caudicles soft and granulose; viscidium semiliquid, transparent. **Nectary** prominent, penetrating ½ of the ovary, forming a vesicle behind the perianth, smooth.

OTHER SPECIMENS: PANAMA: Veraguas: Río Santa María, 10-14 km, NW of Santa Fé, 650-750 m, 10-11 X 1975, *Dressler 5166*, AMO! F! Ridge E of Cerro Tute, NW of Santa Fé, 22 XII 1975, *Dressler 5250*, AMO! MO! Alto Calvario, 900 m, 14 I 1977, *Folsom 1289*, MO! **Bocas del Toro:** Fortuna Dam region, 1200-1300 m, 23 XII 1986, *McPherson 10067*, MO! Vicinity of Cerro Colorado mine above San Felix, 1500 m, 26 I 1988, *McPherson12015*, MO!

DISTRIBUTION AND ECOLOGY: Endemic to western Panama, along the Continental Divide. Epiphyte, 650-1500 m altitude, in rain forest. Flowering from October to January.

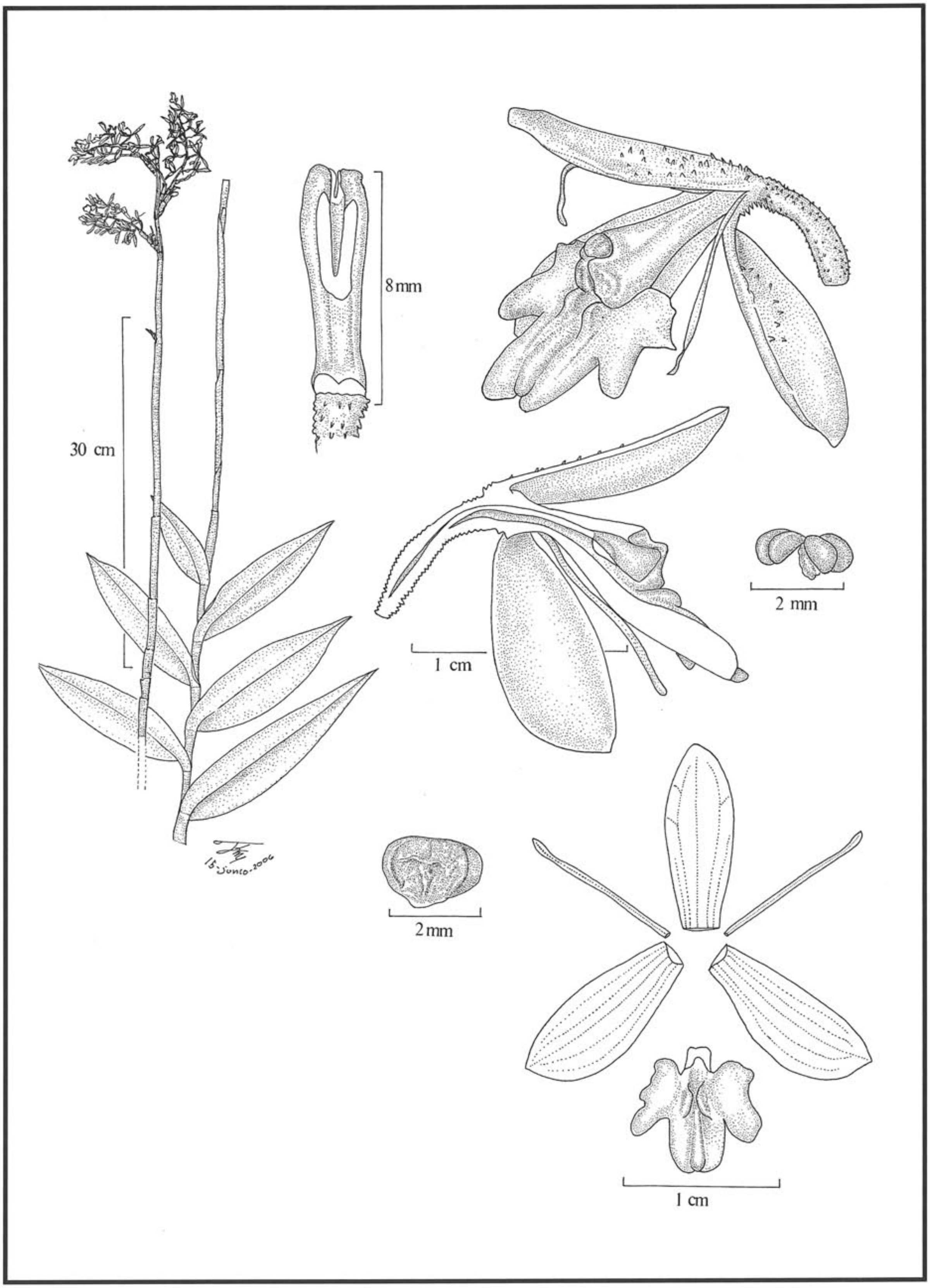
RECOGNITION: *Epidendrum veraguasense* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Flexicaule Subgroup which has a straggling plant habit, where the main stem is not very evident, and the sepals have a dorsal keel which is generally prominent. The species is recognized by the white flowers, the mid-vein of the lateral sepals red towards the apex, the large lip, 8 x 6 mm, constricted above the middle, and the nectary only penetrates half the ovary and forms a prominent vesicle behind the perianth. It is similar to *Epidendrum modestiflorum* Schltr. which also has short (< 5 cm), wide leaves, (up to 15 mm), but relatively large green flowers, sepals 11 mm long, the lip constricted below the middle, 6.4-4.5 mm, and the deep nectary without forming a prominent vesicle. It is also similar to *Epidendrum flexicaule* Schltr. which has copper-green flowers and the leaves are consistently longer (> 5 cm), narrower (< 8 mm), and a similar-sized lip, 7 x 6 mm and rounded sepals and petals.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the Province of Veraguas, in Panama, where the type specimen was collected.

Authors: L. Sánchez S. & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
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EPIDENDRUM VERRUCIPES Schltr.

Plate 1196

EPIDENDRUM VERRUCIPES Schltr., Repert. Spec. Nov. Regni Veg. Beih. 15: 208. 1918.

Type: GUATEMALA: [Without locality], July 1866, ***Bernoulli & Cario 470.*** Holotype: B (destroyed) Lectotype: (here designated): Tracing of drawing of the type AMES!

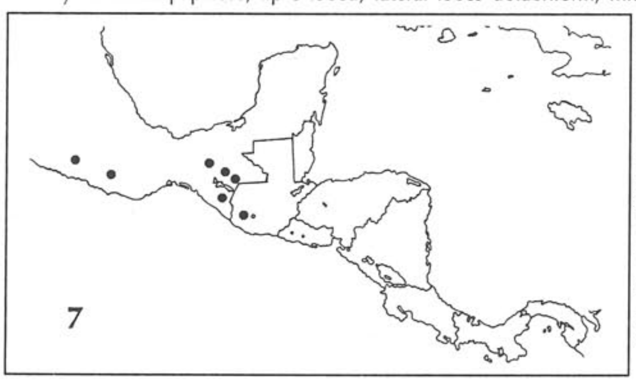
Hierba epífitas, simpodial, cespitosa, erecta, 50-100 cm de alto ó más, incluyendo la inflorescencia. **Raíces** basales, carnosas, gruesas, 2.0-2.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, 35-77 x 0.5-0.8 cm. **Hojas** 7-14, dísticas, distribuidas en los dos tercios apicales del tallo; vaina foliar tubular, terete, papiráceas cuando viejas y después de haber perdido el limbo, 1.5-4.0 cm de largo; láminas elíptico lanceoladas, cortamente acuminadas, mucronadas, ligeramente carinada, subcoriáceas, con venas longitudinales evidentes, (8-11)14-21 x (1.5-2.0)2.7-4.5 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, racemosa en primera floración, en años posteriores produce nuevos racimos de los nudos del pedúnculo y por lo tanto pluriracemosa con el tiempo, 18-28 cm de largo, los racimos densos, cilíndricos; pedúnculo 6-12 cm de largo, cubierto por 2-5 brácteas imbricadas, tubulares, oblongo triangulares, agudas. **Brácteas florales** más cortas que el ovario, ovado triangulares, agudas, 1-2 mm de largo. **Ovario** terete, densamente verrugoso papiloso, 5-7 × 0.4-0.7 mm. **Flores** 15-40 por racimo, simultáneas, resupinadas, amarillo anaranjadas a amarillo verdosas, fragancia muy desagradable. **Sépalos** entreabiertos, elíptico obovados, obtusos, dorsalmente escasa a densamente verrugoso papilosos, 3-nervados, margen entero, revoluto, 9-12 x 3-4 mm; los **laterales** oblicuos. **Pétalos** entreabiertos, libres, glabros, filiformes, agudos, 1-nervados, margen entero, extendido, 9-10 x 0.20-0.25 mm. **Labelo** unido a la columna, carnoso, trilobado, base truncada, 7.0-7.5 x 6.6-7.0 mm; bicalloso, los callos laminares, prominentes; el disco con una carina prominente, roma, la cual se prolonga hasta la mitad del lóbulo medio; lóbulos laterales irregularmente dolabriformes, las esquinas redondeadas, 1.8-2.0 x 4.8-5.0 mm; lóbulo medio oblongo rectangular a ovado, el margen entero, el ápice ligeramente emarginado y ocasionalmente mucronado, 3.8-4.0 x 2.7-3.0 mm. **Columna** recta, obcónica, delgada en la base, 5.0-7.5 mm de largo. **Clinandrio** reducido, entero. **Antera** obovoide, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, de longitud similar a la de los polinios; viscidio viscoso, transparente. **Rostelo** apical hendido. **Lóbulos laterales del estigma** de 1/3 de la longitud de la cavidad estigmática. **Cápsula** no vista.

Epiphytic, sympodial, caespitose, erect **herb. Roots** basal, fleshy, thick. **Stems** simple, cane-like, terete, straight. **Leaves** 7-14, distichous, distributed throughout the upper 2/3 of the stem; sheath tubular, terete, papiraceous when old and after loosing the blade; blade lanceolate-elliptic, short acuminate, mucronate, slightly carinate, subcoriaceous, with evident longitudinal veins. **Inflorescence** apical, elongate, racemose at first flowering, producing new racemes from the nodes of the peduncle in further years and thus pluri-racemose, the racemes compact, cylindrical; peduncle elongate, covered by 2-5 imbricating, tubular, oblong-triangular, acute bracts. **Floral bracts** shorter than the ovary, ovate-triangular, acute. **Ovary** short, terete, densely verrucose-papillose. **Flowers** 15-40 per raceme, simultaneous, resupinate, orange-yellow to greenish-yellow; fragrance very disagreeable. **Sepals** partly spreading, obovate-elliptic, obtuse, dorsally scarcely to densely verrucose-papillose, 3-veined, margin entire, revolute, the lateral sepals oblique. **Petals** partly spreading, free, glabrous, filiform, acute, 1-veined, margin entire, spreading. **Lip** united to the column, fleshy, 3-lobed, base truncate; bicallose, the calli laminar, prominent, the disc with a prominent, rounded keel that runs to the apical sinus of the midlobe; lateral lobes irregularly dolabriform, the corners rounded; midlobe oblong-rectangular to ovate, the apex shallowly emarginate to sometimes mucronate. **Column** straight, obconical, thin at the base, short. **Clinandrium-hood** reduced, entire. **Anther** obovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, about as long as the pollinia; viscidium viscous, transparent. **Rostellum** apical, slit.

OTHER SPECIMENS: MÉXICO: Guerrero: Aprox. 3 km, al NO de Cruz de Ocote, 4 km aprox. sobre el camino a Yextla, 26 IX 1983, *Lorea 2509*, AMO! Cerca de la Piedra Acanalada, ca. km 80 del camino a Casa Verde-Atoyac de Alvarez, 1800 m, 6 III 1988, *Soto 4425*, AMO! (Illustration) **Oaxaca:** Without locality, pressed cult. 26 VI 1985, *Hágsater 6851*, AMO x2! Ibid. 3 VI 1994, AMO!(Illustration) Ibid. 20 VI 1994, AMO x4! Ibid. 29 VI 1995, AMO x6! Ibid. 25 VI 1997, AMO x10! Juxtlahuaca, pressed cult. 16 VII 1984, *Hágsater 6852*, AMO! Ibid. pressed cult. 1 VIII 1989, AMO x6! Mixes, cult. Huayapam, pressed cult. 26 VI 1997, *Hágsater 11799*, AMO! Huautla, pressed cult. 15 VII 1998, *Hágsater 11807*, AMO! Ibid. pressed cult. 30 V 2000, AMO! Ibid. pressed cult. 7 VII 2000, AMO x2! **Chiapas:** Tenejapa, Near paraje Yashanal, 2300 m, 22 IV 1981, *Breedlove 51066*, AMES! CAS! Villaflores, Cerro Tres Picos, 1800 m, 4 IV 1995, *Castillo 381*, AMO! Mt. Pasitar, 3 VIII 1937, *Matuda 213*, AMES! Ibid. *Matuda 220*, US! Siltepec, 9 VIII 1937, *Matuda 1598*, MEXU! MICH! SEL! Tenejapa, La Cueva yashanal, 15 III 1984, *Shilom 7409*, AMO x3!(Illustration voucher) Ruinas de Chinkultic, ca. del Parque Lagunas de Montebello, zona cárstica junto al cenote, 1450 m, col. 1 II 1989, pressed 30 VII 1996, *Soto 4681*, AMO! Ibid. pressed 10 VI 1997, AMO x3! Ibid. pressed cult. 30 V 2000, AMO x7! Km 78 del camino Casa Verde a Atoyac de Álvarez, Pedregal de Cruz de Ocote, 1850 m, 20 V 1995, *Soto 7845*, AMO!, Las Margaritas km 13.2 del camino Las Margaritas-Cruz de Rosario, terrenos del Ejido Chiapas, 1550 m, col. 29 III 1997, pressed cult. 5 IV 2000, *Soto 8144*, AMO! Ibid. pressed cult. 29 IV 2002, AMO! Huixtla km 15.1 del Camino a Libertad Calera, que sale del km 9.3 de la carretera Huixtla-Motozintla, 1300 m, 28 III 1997, *Soto 8279*, AMO! (flowers in spirit) La Independencia km 18.9 del camino Montebello (Caseta del Parque)-Marquéz de Comillas, parte alta de la cañana del Río Veracruz, 1200-1250 m, 25 III 2000, *Soto 9465*, AMO! (flowers in spirit). **GUATEMALA:** Without locality, 1 II 1868, *Bernoulli 358*, BR x2! G! K! NY! W! **Alta Verapaz:** Between San Pedro Carcha and Campur, 1200-1350 m, 20 III 1970, *Harmon 2173*, AMES! MO! US! Pacaya, 20 VIII 1938, *Johnston 1359*, AMES! Cobán, Vicinity of Coban, ca. 1300 m, 23 III 1941, *Standley 89923*, AMES! Cubilguitz [Finca Cubilhuitz], 350 m, 1 VI 1901, *Tuerckheim 8007*, AMES! US! Finca Los Alpes, ca. 3500 ft, 22 III 1939, *Wilson 355*, F! **Quiché:** Valley of Rio de Las Violetas, north of Nebaj, 5800-6000 ft, 22 VII 1964, Proctor 25222, LL! MO! **Chimaltenango:** Without locality, *Skutch 678*, AMES x2! DH! MICH! US! **Quetzaltenango:** Volcan Atitlan, 8200 ft, 24 X 1934, *Skutch 1523*, AMES! CAS! Quetzaltenango, 2666 m, 1 I 1923, *Vaght 2666*, AMES!

DISTRIBUTION AND ECOLOGY: Known from southern Mexico, states of Guerrero, Oaxaca and Chiapas, and Guatemala. Epiphyte in evergreeen forest and wet montane rain forest, at 1450-1800 m altitude. Flowering from February to July.

RECOGNITION: *Epidendrum verrucipes* belongs to the Anceps Group, which is recognized by the simple stems, generally elongate, compound racemose inflorescence producing new successive racemes with time, fleshy flowers, filiform to narrowly spatulate petals, and the Polyanthum Subgroup which has elongate, not subcorymbose racemes. The species is recognized by the terete stems, 2.7-4.5 cm wide leaves with evident longitudinal veins when dry, orange-yellow to greenish yellow flowers with a very disagreeable odour, ovary densely verrucose-papillose, lip 3-lobed, lateral lobes dolabriform, midlobe rectangular oblong, ovate, slit. *Epidendrum polyanthum* Lindl. has leaves without evident longitudinal veins, orange-yellow flowers sepals and petals unornamented to somewhat verrucose and an agreable fragrance. *Epidendrum martinezii* L.Sánchez & Carnevali has shorter plants, the leaves distributed along the upper half of the stem, smaller flowers, sepals and petals 7-8 mm long, orange-yellow, occasionally tinged with brown, the lateral lobes of the lip with a shallow sinus, the margin entire, with the apex rounded. *Epidendrum tuxtlense* Hágsater, García-Cruz & L.Sánchez, has laterally compressed stems, the inflorescence with compact racemes of smaller flowers, sepals and petals 5-7.5 mm long, the lateral lobes of the lip entire, suborbicular, and the midlobe subquadrate, slightly wider towards the apex.

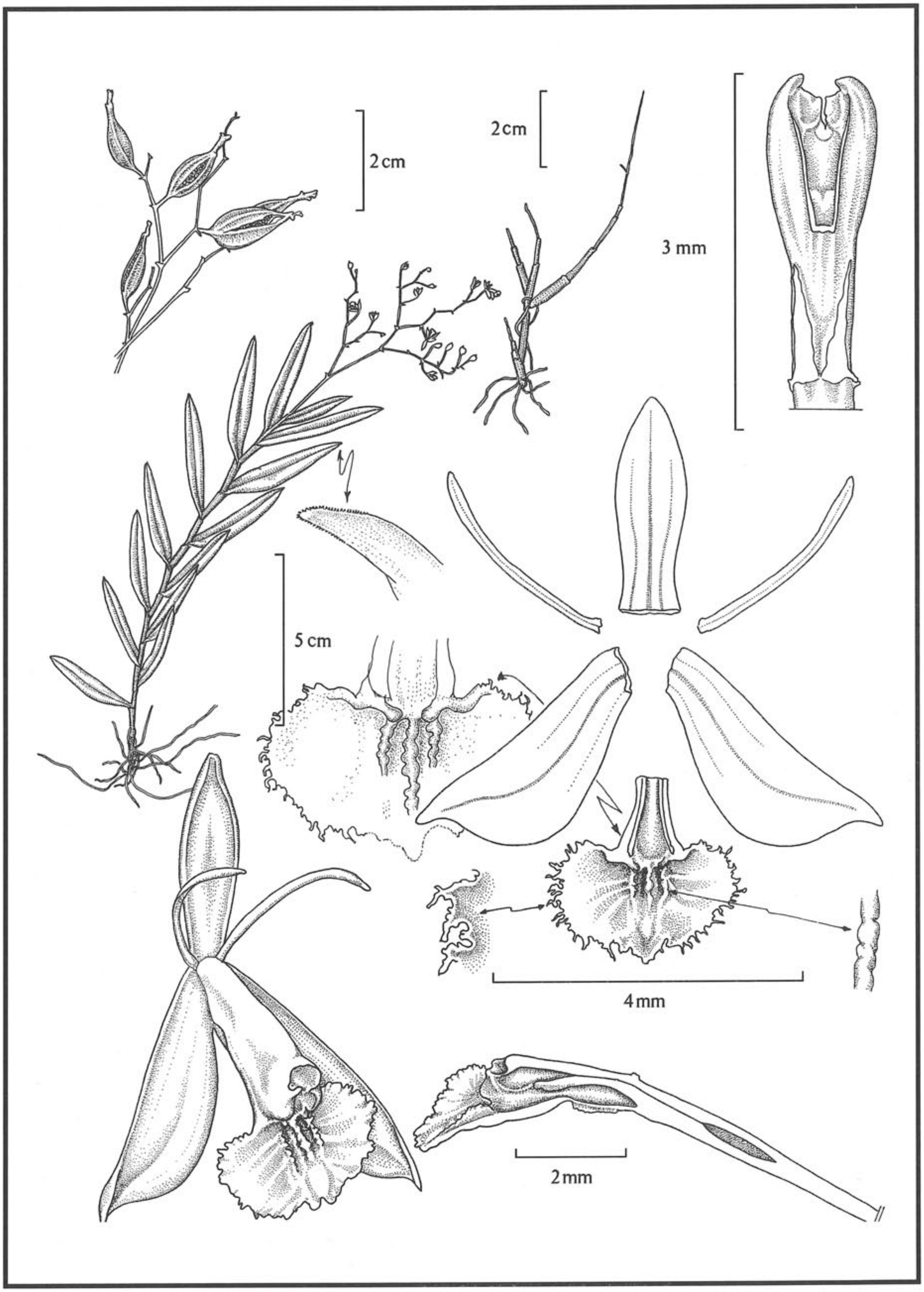


7

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *verruci-*, warty, and *pedes*, foot, in reference to the warty ovary of the species.

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EPIDENDRUM VINCENTINUM Lindl. **Plate 1197**

EPIDENDRUM VINCENTINUM Lindl., in Hook., J. Bot. 3: 88. 1840.

Type: ST. VINCENT: ***Guilding s.n.*** Holotype K-Lindley; tracing of holotype W 49680!

Synonyms: *Epidendropsis vincentina* (Lindl.) Garay & Dunsterv., Venez. Orch. Illus. 6: 114. 1976.

Epidendrum serricardium Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 218. 1923. Type: COSTA RICA: Prov. Alajuela, Arbres d'une haie, San Juan de San Ramón, 1025 m, I 1922, ***A. M. Brenes 254*** Holotipo B, destroyed. Lectotype (designated by Barringer, 1986): AMES 28834! Isotype: CR 33908!

Hierba epífita, rara vez terrestre, monopodial, (5)11-30 cm de alto incluyendo la inflorescencia. **Raíces** basales, de la base del tallo principal, carnosas, filiformes, 0.2-1.5 mm de grosor. **Tallos** tipo caña, erectos, rectos, produciendo un nuevo tallo de un internodo subapical del tallo anterior, el principal de 7-15 x 0.1-0.2 cm, los secundarios progresivamente reducidos, de 4-11 cm de largo; cubiertos totalmente por las vainas. **Hojas** 3-15, distribuidas a lo largo del tallo, alternas, articuladas, extendidas, vaina foliar tubular, finamente estriada, verde, manchada de púrpura, 3.8-14 mm de largo; lámina delgada, angostamente elíptica a lanceolada, aguda y apiculada, verde con manchas púrpuras, margen apical con papilas diminutas, (15)22-40 x 2-7mm. **Bráctea espatácea** ausente. **Inflorescencia** apical, paniculada, erecta, laxa, 2-10(12) cm de largo; pedúnculo terete, desprovisto de brácteas, filiforme, 1.5-2.5 cm de largo; raquis filiforme, en zigzag; brácteas de la base de las ramas, angostamente triangulares, abrazadoras, acuminadas, 4-7 mm. **Brácteas florales** triangulares, abrazadoras, agudas, 6-13 mm. **Flores** 9-40, 6-7 mm de diámetro, simultáneas, resupinadas, sépalos y labelo verdosos a rosado-púrpuras, pardos, pétalos blanco-hialinos o púrpuras. **Ovario** terete, delgado liso, inflado detrás de los sépalos, 4-5 mm de largo. **Sépalos** oblanceolados, binervados a trinervados, margen entero, extendido; el dorsal agudo u obtuso, 2.8-3.3(4) x 0.9-1.1 mm; los laterales agudos, oblicuamente insertados a la base de la columna, 3.2-3.4 x 1.3-1.5 mm. **Pétalos** lineares, uninervados, margen entero, extendido, 2.8-3 x 0.1-0.2 cm. **Labelo** unido a la columna, reniforme, ápice obtuso, diminutamente eroso-fimbriado, 1.5-2.1 x 2.5-2.8 mm; bicalloso en la base, callos subglobosos, pequeños, con 3 quillas verrucosas, las laterales cortas y la central corta o en ocasiones hasta el ápice, en ocasiones más gruesa que las laterales, con 4 cunículos, 2 entre la quilla central y las laterales y otros dos a los lados de las quillas. **Columna** ligeramente arqueada, delgada, gradualmente dilatada hacia el ápice, lisa, 2.9-3 mm de largo. **Clinandrio** corto, entero, **Rostelo** apical, hendido. **Antera** no vista. **Polinios** 2, obovoides, lateralmente comprimidos; caudículas suaves y granulosas. **Lóbulos laterales del estigma** menos de la mitad del largo de la cavidad estigmática. **Nectario** poco profundo, penetrando hasta el sépalo dorsal, inflado detrás de la inserción de los sépalos laterales, liso. **Cápsula** ovoide a elipsoide o subglobosa, con cuerpo de 1.5-2.2 cm de largo, 9-10 mm de diámetro, pedicelo de 6-10 mm de largo, el cuello apical corto, de 2-5 mm largo.

Epiphytic, rarely terrestrial, monopodial, **herb. Roots** basal, from the base of the main stem, fleshy, filiform. **Stems** cane-like, erect, straight, producing a new stem from a subapical internode of the previous stem, the stems progressively shorter, totally covered by sheaths. **Leaves** 3-15, distributed throughout the stem, alternate, articulate, spreading; sheath tubular, minutely striated, green, tinged with purple; blade thin, narrowly elliptic to lanceolate, acute and apiculate, green with purple spots, apical margin minutely papillose. **Inflorescence** apical, paniculate, erect, lax-flowered; peduncle terete, lacking bracts, filiform, rachis filiform, zigzag; with a narrowly triangular, acuminate bract at the base of each branch. **Floral bracts** triangular, acute. **Flowers** 9-40, small, delicate, simultaneous, resupinate, sepals and lip greenish to pinkish purple or brown, petals hyaline white to purple. **Ovary** terete, thin, smooth, somewhat inflated behind the perianth. **Sepals** oblanceolate, 2- to 3-veined, dorsal sepal acute to obtuse; lateral sepals wider than the dorsal sepal, acute, oblique inserted to the base of the column. **Petals** linear, 1-veined, margin entire, spreading. **Lip** united to the column, reniform, apex obtuse, margin minutely erose-fimbriate; bicallose, the calli subglobosa, small, with 3 parallel thickened, verrucose keels, the lateral ones shorter, the mid-keel sometimes longer, reaching the apex of the lip, sometimes wider, with 4 cunicula, between the keels and outside of the lateral keels. **Column** slightly arching, thin, dilated towards the apex, smooth. **Clinandrium-hood** short, entire. **Rostellum** apical, slit. **Anther** not seen. **Pollinia** 2, obovoid, laterally compressed; caudicles soft and granulose. **Nectary** shallow, penetrating up to the dorsal sepal, widened behind the insertion of the lateral sepals, smooth. **Capsule** ellipsoid to subglobosa, with a short pedicel and very short apical neck.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Costa Rica, Colombia, Venezuela, Ecuador, Peru and the Antilles (Dominican Republic, Puerto Rico, Guadeloupe, Dominica, Martinique, Saint Lucia, Saint Vincent, and Trinidad & Tobago. Twig epiphyte, or on small trees and shrubs (*Psidium guajaba*, Orange trees, *Hibiscus sp.*), in disturbed places, rarely terrestrial on roadside banks, and in rain or cloud forests, 700-1365 m altitude. Flowering from August to March.



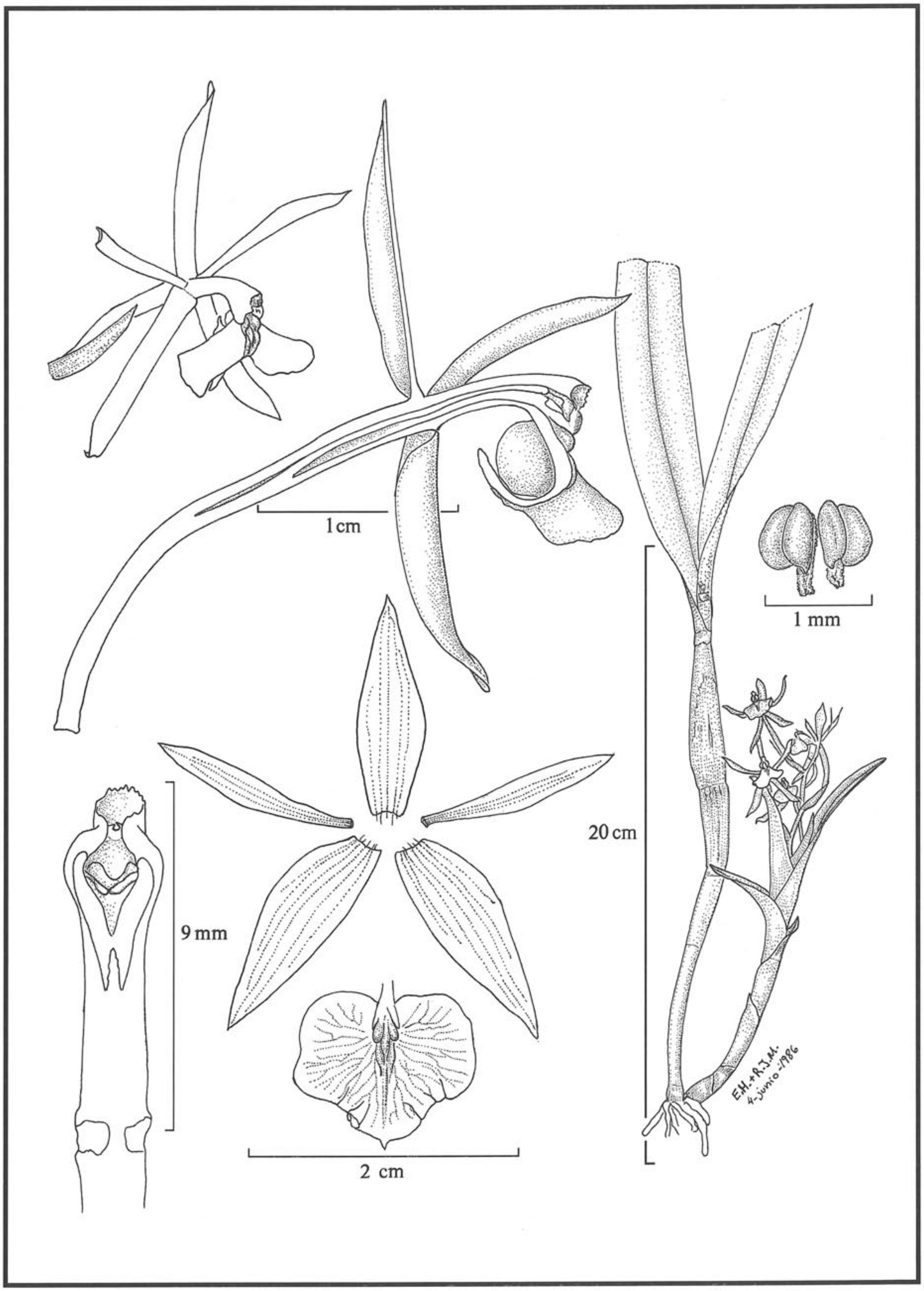
RECOGNITION: *Epidendrum vincentinum* belongs to the Violascens Group which is recognized by the small, fast growing plants, sometimes producing subapical new stems, flat leaves, thin peduncle and rachis of the inflorescence, and numerous, small, delicate and generally greenish flowers. The species has 6-7 mm sized flowers, with a reniform lip, the margin minutely erose-ciliate, bicallose, with 3 verrucose keels. *Epidendrum violascens* has terete leaves and the callus of the lip is tridentate.

CONSERVATION STATUS: NT. Not threatened. Growing in disturbed places, and as a twig epiphyte plants grow rapidly and are of short duration.

ETYMOLOGY: In reference to the Antillies island of Saint Vincent, where the type was collected.

REFERENCES: Ackerman, J. D., 1995. **An Orchid Flora of Puerto Rico and Virgin Islands**. Mem. New York Bot. Gard. 73: 57-58. Ackerman, J. D. y M. del Castillo Mayda, 1992. **The Orchids of Puerto Rico and the Virgin Islands**, University of Puerto Rico Press, San Juan, Puerto Rico, pp 122-123. Barringer, K.A., 1986, **Fieldiana (Bot.)** 17: 7; Carnevali G., I. Ramírez-Morillo, G. A. Romero-González, C. A. Vargas and E. Foldats, 2003. in Steyermark J. A. *et al.* **Flora of the Venezuelan Guyana**, 7: 345. Dodson, C. H., 2001. **Native Ecuadorian Orchids.** 2: 297. Feldmann Ph. y N. Barré. 2001. **Atlas des Orchidées sauvages de la Guadeloupe**, p 88-89. Garay L. A. y Dunsterville G. C. K., 1974, **Venez. Orchid. Ill.** 6: 114. Garay L. A. y H. R. Sweet. 1974. **Flora of The lesser Antilles**, p 161. Hágsater E., 2005. in Pupulin F., **Vanishing Beauty Native Costa Rican Orchids**, 1: 305. Nir, A. M., 2000. **Orchidaceae Antillanae**, p. 143. Schultes R. E., 1960, **Native Orchids of Trinidad and Tobago**, p 130-131.

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EPIDENDRUM VOLUTUM Lindl. **Plate 1198**

EPIDENDRUM VOLUTUM Lindl., Paxt. Fl. Gard. 2: 151, 1851.

Type: A hothouse epiphyte from Central America; flowers greenish white, introduced in 1849 by ***G. U. Skinner s.n.*** Holotype: K-L (not seen) photo of type AMES 26018! Tracing of type W 5770! Tracing of fig. 215, W 52163!

Epidendrum radlkoferianum Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17: 142, 1921. Type: PANAMA: Chiriquí: [without locality],1 April 1858, ***Moritz Wagner s.n.*** Holotype: B (destroyed), photo and drawing of type AMES 39928! Isotype: M!

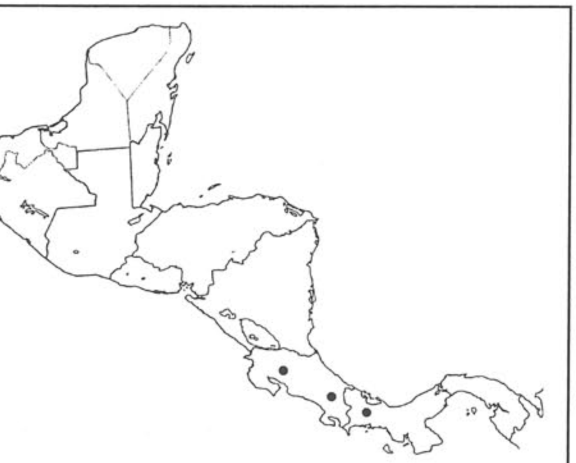
Hierba epífita, simpodial, subcespitosa, 20-30 cm de alto. **Raíces** basales, carnosas, 0.7-1 mm de grosor. **Tallos** engrosados formando un seudobulbo fusiforme, heteroblástico, recto, 10-15 x 0.3-1 cm; cubiertos por 3-4 vainas papiráceas, blanco grisáceas. **Hojas** 2-3, distribuidas en el ápice del seudobulbo, coriáceas; lámina angostamente elíptica lanceolada, ápice agudo, articuladas, 6-21 x 1.0-1.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida del tallo inmaduro, racemosa, 13-15 cm de largo; pedúnculo lateralmente comprimido, 3-5 cm de largo; con 1 bráctea oculta por las hojas, oblongo triangular, aguda; raquis terete, delgado, recto a ligeramente sinuoso. **Brácteas florales** más cortas a casi de la misma longitud que el ovario, las apicales más pequeñas, oblongo triangulares, acuminadas, 0.8-2.3 cm de largo. **Ovario** terete, no inflado, no ornamentado, 25-33 x 0.3-0.5 mm. **Flores** 4-12, simultáneas, resupinadas, los sépalos y pétalos café verdoso, labelo y columna verde manzana a amarillo pálido, callo blanco verdoso; fragancia intensa, a jazmín limón, por la noche. **Sépalos** extendidos, elípticos lanceolados, acuminados, 5-7 nervados, margen entero, revoluto, 14-18 x 4.0-5.0; los **laterales** oblicuos, 15-18 x 5.0-5.5 mm. **Pétalos** extendidos, linear elípticos, agudos, 3-nervados, 13-16 x 1.5-2.5 mm. **Labelo** unido a la columna, suborbicular cordiforme, oscuramente trilobado, base ligeramente cordada, margen diminutamente ondulado, 10-12 x 12-13 mm; bicalloso, los callos laminares, prominentes; disco con tres carinas evidentes, la central más larga que las laterales, prolongándose hasta el ápice; lóbulos laterales elíptico obovados, redondeados, 7.0-7.5 x 3.5-4.0 mm; lóbulo medio transversalmente elíptico a triangular, apiculado, recurvado, 3.7-4.0 x 3.4-3.7 mm. **Columna** ligeramente arqueada a arqueada, delgada, 7-9 mm de largo. **Clinandrio** prominente, margen eroso dentado. **Antera** ovoidea, 4-locular. **Polinios** 4, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, ocupando 1/2 de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, delgado, liso. **Cápsula** no vista.

Epiphytic, sympodial, subcaespitose **herb. Roots** basal, fleshy, thin. **Stems** thickened to a fusiform, heteroblastic, straight pseudobulb; covered by 3-4 papery, grayish sheaths. **Leaves** 2-3, aggregate at the apex of the pseudobulb, coriaceous, blade narrowly elliptic, lanceolate, apex acute, articulate. **Inflorescence** apical, produced from the immature stem, racemose; peduncle laterally compressed, with a single bract hidden by the leaves, oblong-triangular, acute; rachis terete, thin, straight to slightly sinuous. **Floral bracts** shorter to as long as the ovary, the apical ones smaller, oblong-triangular, acuminate. **Ovary** terete, not inflated, smooth. **Flowers** 4-12, simultaneous, resupinate, the sepals and petals greenish brown, lip and column apple-green to pale yellow, callus greenish white; intensely fragrant at night, of jasmine-lime. **Sepals** spreading, elliptic-lanceolate, acuminate, 5-7-veined, margin entire, revolute; the lateral sepals oblique. **Petals** spreading, linear-elliptic, acute, 3-veined. **Lip** united to the column, suborbicular-cordiform, obscurely 3-lobed, base slightly cordate, margin minutely undulate; bicallose, the calli laminar, prominent, disc with 3 evident keels, the middle one longer than the laterals, reaching the apex; lateral lobes elliptic-obovate, rounded; midlobe transversely elliptic to triangular, apiculate, recurved. **Column** slightly arching to arching, thin. **Clinandrium-hood** prominent, margin erose, dentate. **Anther** ovoid, 4-celled. **Pollinia** 4, laterally compressed; caudicles soft and granulose, longer than the pollinia: viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, thin, smooth.

OTHER SPECIMENS: COSTA RICA: Puntarenas: Buenos Aires, R. I. Ujarrás-Salitre-Cabagra, Cuenca Térraba-Sierpe, Reserva Indígena Ujarrás, 1100 m, 17 V 2001, *Alfaro 3668*, INB! Cordillera de Tilarán, Monteverde, Canyon of Río Guacimal, 3 km S of San Luis village, 7 km S of Monteverde, junction of Río Guacimal, 520-700 m, 8 VII 1991, *Haber 11531*, INB! MO! **San José:** Pérez Zeledón, collected 12 III 1986, pressed cult. 15 V 1995, *Hágsater 8452*, AMO! CR! MO! SEL! Ibid. pressed cult. 31 V 1999, AMO! (Illustration voucher) **PANAMÁ: Chiriquí & Veraguas,** 4000 ft, *Powell 89*, AMES x4! K! MO! Ibid. *Powell 3338*, AMES! Ibid. *Powell 3364*, AMES! Chiriquí, Boquete, 3800 ft, 20 V 1938, *Davidson 674*, F! MO! US!

DISTRIBUTION AND ECOLOGY: Ranging along the Pacific slope of Costa Rica and Panama, from 520 to 1200 m altitude. Flowering from March to July.

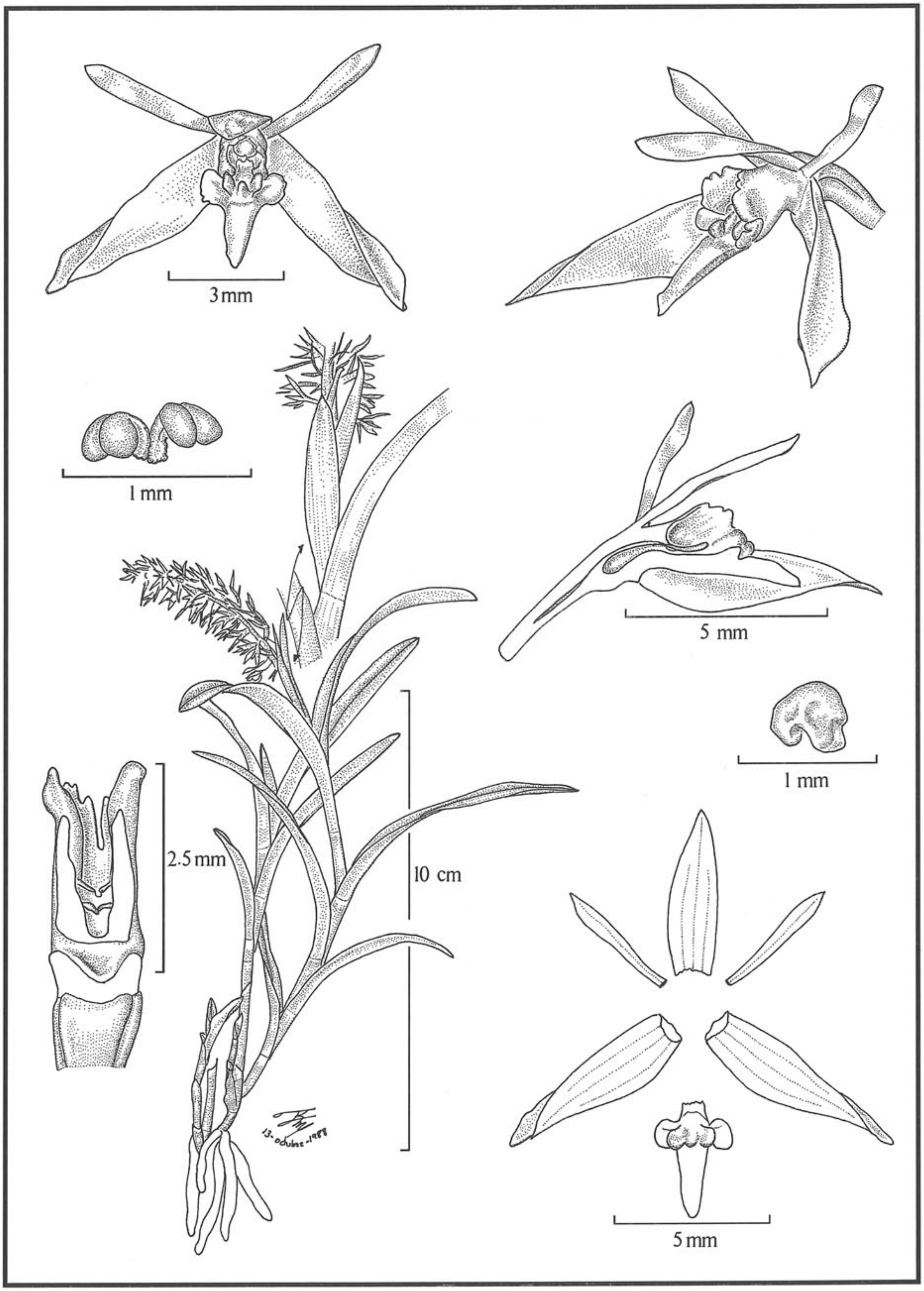
RECOGNITION: *Epidendrum volutum* belongs to the Coilostylis Group which is characterized by the sympodial, caespitose plants, the stems forming a fusiform, heteroblastic pseudobulb, with an apical, racemose, distichous inflorescence, the peduncle covered by large bracts, and flowers large, star-shaped, with long, narrow sepals and petals. The species is recognized by the thickened stem with 2-3 apical, narrowly elliptic-lanceolate leaves 6-21 cm long, the inflorescence produced from the immature stem, with 4-12 small, green to greenish brown flowers, sepals 14-18 mm long, the suborbicular-cordiform, obscurely lobed lip. *Epidendrum purpurascens* Focke (syn. *E. glumibracteum* Rchb.f.) has larger flowers, sepals 15-25 mm long, and the lip clearly 3-lobed, with the midlobe widened towards the middle. *Epidendrum oerstedii* Rchb.f. also flowers from the immature pseudobulb, but has 1-2, ovate-elliptic, thickly coriaceous leaves, 2-5 large flowers, sepals 40-65 mm long, the lip deeply 3-lobed, the margins entire. *Epidendrum ciliare* L. is similar to the latter, but flowers from the inmature pseudobulbs, and the outer margin of the lateral lobes is deeply fimbriate.



2

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *volvo, volutas*, rolled, in reference to the characteristic recurved lip.



EPIDENDRUM ZOSTERIFOLIUM F.Lehm. & Kraenzl. **Plate 1199**

EPIDENDRUM ZOSTERIFOLIUM F.Lehm. & Kraenzl., Bot. Jahrb. Syst. 26: 474. 1899.

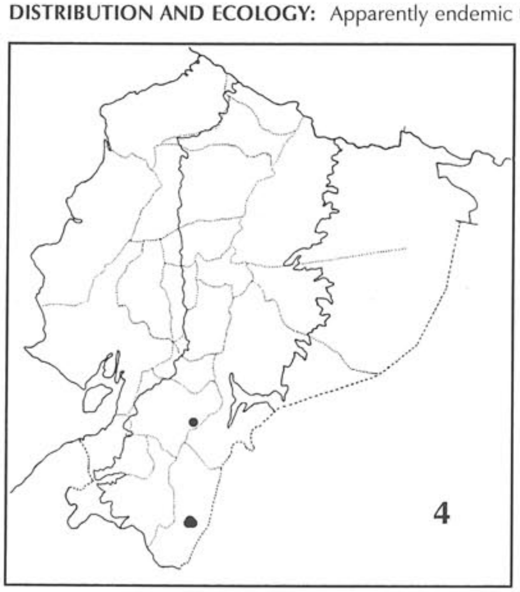
Type: Ecuador: Epiphytica in silvis densis circa Cuchipamba et Chiquincha, Andes oriental. ditionis Cuenca, 1300-1800 m, ***Lehmann 6570.*** Holotype: K!

Hierba terrestre, cespitosa, de 16-25[30] cm de alto. **Rizoma** corto. **Raíces** basales, gruesas, carnosas, de 2.5-3.0 mm de grosor. **Tallos** tipo caña, ligeramente flexuosos, ancipitosos, 13-15 x 0.3-0.6 cm, verde. **Hojas** 3-7, articuladas, distribuidas a lo largo del tallo; vainas ancipitosas, lisas, verde claro, la inferior no foliosa, 15-23 mm de largo; lámina oblonga, ápice desigualmente bilobado, subcoriácea, con una quilla dorsal prominente, verde claro, desiguales, progresivamente más largas, 35-96[150] x 5-12 mm. **Bráctea espatácea** 1-2, de lados casi paralelos, obtusas, alrededor del largo del pedúnculo y ocultándolo, 3.5-4.3 x 0.3-0.7 cm. **Inflorescencia** apical, del crecimiento maduro, racemosa, arqueada, cola de zorra, con ca. 60 flores, racimo de 4-6 x 1.7-2.2 cm, pedúnculo de 2.0-2.5 cm de largo, cubierto por las espatas. **Brácteas florales** muy delgadas, linear triangulares, acuminadas, del mismo hasta del doble de longitud que el ovario, 5-15 x 0.5-1.0 mm. **Ovario** terete, dilatado hacia el ápice, 4.0-4.5 x 0.7-0.9 mm. **Flores** pequeñas, el labelo siempre orientado hacia el raquis, abriendo sucesivamente, primero las de la parte media del racimo, estando todas abiertas a la vez, color crema verdoso, el centro subapical de los sépalos y labelo concentrándose el color verde hasta volverse intenso; fragancia diurna intensa, especiada. **Sépalos** entreabiertos, ovados, engrosados cerca del ápice, 3-nervados, la nervadura central prominente en seco, el **dorsal** agudo, 4.6-5.0 x 1.2-1.5 mm; los **laterales** acuminados, con una quilla prominente dorsal apical, 5.8-6.5[7] x 1.2-1.5 mm. **Pétalos** extendidos, linear oblanceolados, agudos, asimétricos, engrosados cerca del ápice, 1-nervados, la nervadura prominente en seco, 3.2-4.0 x 0.4 mm. **Labelo** unido a la columna, trilobado de 2.7 x 1.9 mm, bicalloso, callos algo lateralmente comprimidos, con una quilla corta entre los callos; lóbulos laterales redondeados, suborbiculares a dolabriformes, margen finamente eroso, 0.5 x 0.5 mm; lóbulo medio triangular, acuminado, 1.4 x 0.5 mm. **Columna** corta, gruesa, 2.2-2.5 mm de largo incluyendo el clinandrio. **Clinandrio** prominente, ocupando la mitad del largo de la columna, en forma de embudo, bilobado, eroso. **Rostelo** a la mitad de la columna incluyendo el clinandrio, hendido. **Lóbulos laterales del estigma** pequeños. **Antera** reniforme, roma al frente, 4 locular. **Polinios** 4, ovoides, lateralmente comprimidos, subiguales, caudículas suaves y granulosas, más cortas que los polinios; viscidio semilíquido transparente. **Nectario** poco profundo penetrando 1/4 del ovario, formando una vesícula, liso interiormente. **Cápsula** no vista.

Terrestrial, caespitose **herb. Roots** basal, fleshy. **Stems** simple, cane-like, flexuous, ancipitose. **Leaves** 3-7, oblong, apex unequally bilobed, subcoriaceous. **Spathaceous bracts** 1-2, nearly parallel sided, obtuse, covering the peduncle. **Inflorescence** apical, racemose, arching, foxtail-like, many-flowered. **Floral bracts** as long to twice as long as the ovary, acuminate. **Ovary** terete, thickened towards the apex. **Flowers** successive, those in the middle opening first, all open at one time, the lip always oriented towards the rachis, greenish-cream colored, the intense green color concentrated towards the apex of the sepals and lip, spicy, strong, daytime fragrance. **Sepals** partly spreading, ovate, acute to acuminate, thickened towards the apex, 3-veined, the mid-vein prominent when dry. **Petals** spreading, linear-oblanceolate, acute, 1-veined, the vein prominent when dry. **Lip** united to the column, 3-lobed, bicallose, with a short keel in the middle; lateral lobes small, suborbicular to dolabriform, margin finely erose, midlobe triangular, about 3 times longer than wide. **Column** short, thick. **Clinandrium hood** prominent, funnel-shaped, bilobed, margin erose. **Rostellum** to the middle of the column including the clinandrium, slit. **Nectary** penetrating ¼ of the ovary, unornamented.

OTHER SPECIMENS: ECUADOR: Zamora-Chinchipe: Km 25, new road Loja to Zamora at Quebrada San Francisco on Río San Francisco, 24 IV 1989, *Dodson 17986*, RPSC! Hort. Cuenca, *Hágsater 11875*, AMO! K! MO! QCNE! SEL! (Illustration voucher). Loja-Zamora km 33, dry rocks with grass and scattered shrubs, 1800-1850 m, *Holm-Nielsen 4150*, AAU! AMES! COL! QCA! QCNE! S(x2)! SEL!

DISTRIBUTION AND ECOLOGY: Apparently endemic to the eastern slopes of the Andes in southern Ecuador, east of Cuenca and Loja, on rocks in grassy slopes and in woods, 1800-2000 m. Flowering in April.

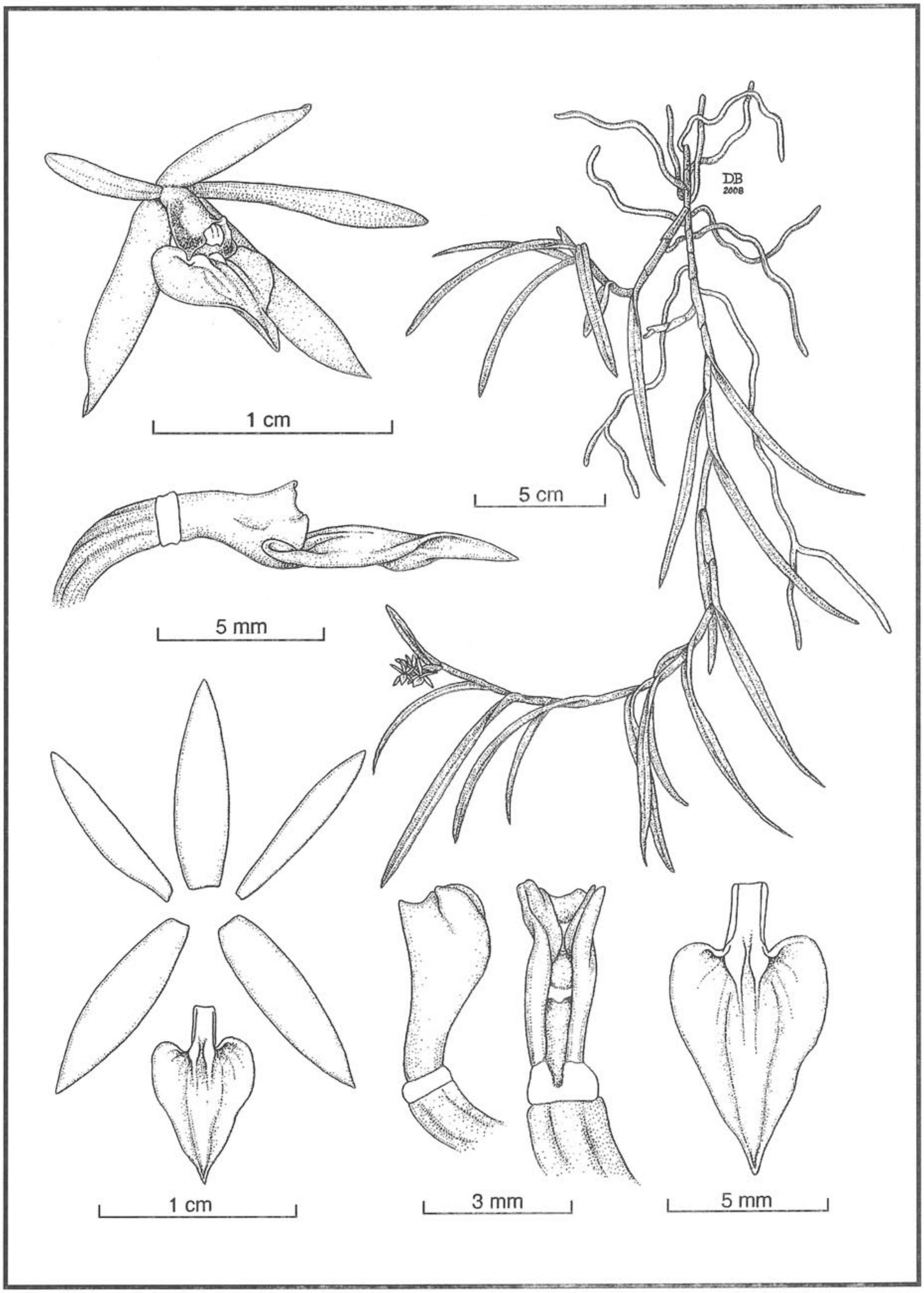


RECOGNITION: *Epidendrum zosterifolium* belongs to the Alpicolum Group which is recognized by the simple stems, long, narrow spathes, and numerous flowers with fleshy lip, triangular midlobe and roundish lateral lobes. The species has sepals 5-7 mm long, greenish white flowers, with the apical half of sepals and lip deep green, the prominent funnel-shaped, bilobed, erose clinandrium, with a strong, daytime, spicy fragrance, leaves oblong, bilobed. *Epidendrum alpicolum* has larger flowers, sepals 18 mm long, leaves 18 mm wide, clinandrium hood short, and lateral lobes of lip with the margin erose. *Epidendrum pucunoënse* Hágsater & Dodson has a similar prominent clinandrium hood, but smaller flowers, sepals 4-5 mm long, and the lateral lobes of the lip proportionately much larger.

CONSERVATION STATUS: DD. Data deficient. As it has been found on grassy slopes, and thus on disturbed habitats, it would not appear to be at risk.

ETYMOLOGY: In reference to *Zostera marina* (Najadaceae) to which the authors compared the leaves.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & L. Sánchez S.**
Herbario AMO **México, D.F., MÉXICO**



EPIDENDRUM ZUNIGAE Hágsater, Karremans & Bogarín **Plate 1200**

EPIDENDRUM ZUNIGAE Hágsater, Karremans & Bogarín, Lankesteriana 8(2): 63. 2008.

TYPE: COSTA RICA. Puntarenas: Osa, Sierpe, Mogos, alrededores de Quebrada Porvenir, ca. 3 km norte de Alto de Mogos, 8°46′36.5″N 83°21′23.6″ W, 126 m, bosque muy húmedo tropical, epífitas en bosque secundario, 30 Marzo 2006, ***D. Bogarín 2680, J. Zúñiga & Curso de Botánica Forestal-UCR***. Holotype: JBL-spirit! (Illustration voucher).

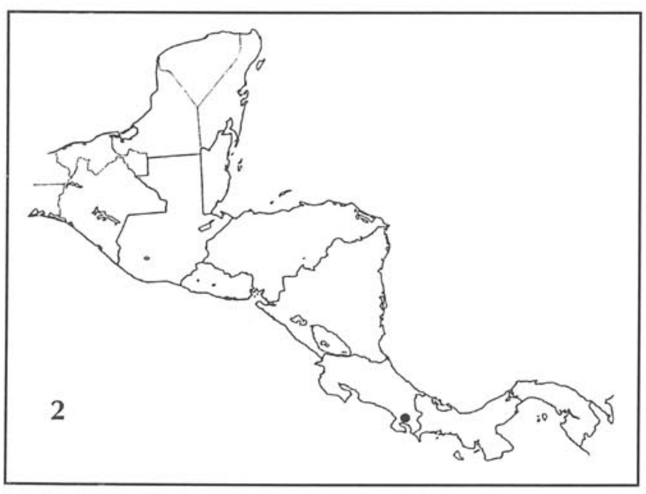
Hierba epífita, monopodial, ramificada, colgante, de 35 cm de largo. **Raíces** basales del tallo primario, carnosas, filiformes, ca. 1 mm de grosor. **Tallos** teretes, algo flexuosos, incipientemente ramificado cerca de la base, el principal de 30 x 0.3 cm. **Hojas** numerosas; vaina tubular, finamente rugosa, 2 cm de largo; láminas linear lanceoladas, acuminadas, cortamente mucronadas, coriáceas, ligeramente carinadas, las del tallo principal ca. 14, semejantes, distribuidas a lo largo de todo el tallo, 4.5-10 x 0.5-0.8 cm. **Bráctea espatácea** ausente. **Inflorescencia** apical, producida del tallo principal y presumiblemente de las ramificaciones secundarias, florece una sola vez, 0.5 cm de largo, pedúnculo reducido. **Brácteas florales** más largas que el ovario, envolventes, imbricadas, ovado oblongas, redondeadas, 10 x 3 mm. **Flores** 3, dísticas, color verdoso, labelo crema amarillento, columna verde en la base, la mitad apical morada, clinandrio blanco, fragancia no registrada. **Ovario** terete, liso, 8-9 x 1.5-2 mm. **Sépalos** entreabiertos, angostamente elípticos, agudos, 5-nervados, margen ligeramente revoluto, entero, 11 x 2.7-2.9 mm. **Pétalos** entreabiertos, linear elípticos, agudos, 5-nervados, margen extendido, entero, 10 x 1.7 mm. **Labelo** entero, cordiforme, agudo, extendido, ligeramente convexo en posición natural, margen entero, extendido, 7.5 x 5 mm; bicalloso, los callos engrosados en la base y terminados en quillas bajas, con una carina prominente media prolongándose desde la base del labelo hasta el ápice. **Columna** algo arqueada hacia arriba de la mitad en adelante, corta, 4 mm de largo incluyendo el clinandrio; internamente con un par de engrosamientos laterales a la altura del rostelo y que forman un canal angosto. **Clinandrio** prominente, en forma de embudo, carnoso, margen entero. **Antera** obovada, 4-locular. **Polinios** no vistos. **Rostelo** a la mitad de la columna, hendido. **Nectario** no visto. **Cápsula** no vista.

Epiphytic, monopodial, pendent, branching **herb. Roots** basal, from the main stem, fleshy, filiform, thin. **Stems** terete, somewhat flexuous, incipiently branched near the base of the main stem. **Leaves** numerous, distributed throughout the stems; sheath tubular, minutely rugose; blades linear-lanceolate, acuminate, short mucronate, coriaceous, slightly carinate, those on the main stem ca. 14, similar in size. **Spathaceous bract** absent. **Inflorescence** apical, produced from the main stem, and presumably form the secondary branches, flowering only once; peduncle reduced. **Floral bracts** longer than the ovary, amplexicaul, imbricating, ovate-oblong, rounded. **Flowers** 3, distichous, greenish, the lip creamy yellow, column green at base, the apical half purple, clinandrium-hood white. **Ovary** terete, smooth, thin. **Sepals** partly spreading, narrowly elliptic, acute, 5-veined, margin slightly revolute, entire. **Petals** partly spreading, linear-elliptic, acute, 5-veined, margin entire, spreading. **Lip** entire, cordiform, acute, spreading, slightly convex in natural position, margin entire, spreading; bicallose, the calli thickened at the base and ending in low keels, with a prominent median keel stretching from the base of the lip to the apex. **Column** somewhat arching upwards above the middle, short; internally provided with a pair of lateral thickenings at the height of the rostellum, and forming a narrow channel. **Clinandrium-hood** prominent, funnel-shaped, fleshy, margin entire. **Anther** obovate, 4-celled. **Rostellum** at the middle of the column, slit.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from the lowlands in front of the Osa Penninsula, near the Pacific coast of southern Costa Rica, at 126 m altitude. Epiphytic in very wet tropical forest. Flowering in cultivation in November.

RECOGNITION: *Epidendrum zunigae* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the Isomerum Subgroup which has long, pendent plants, very narrow, acuminate leaves, and the inflorescence with 1 to rarely 4 flowers. The species is recognized by the narrow, lanceolate leaves, the 3 greenish flowers, lip creamy yellow, and the apical half of the column purple with the clinandrium white, sepals 11 mm long, and the cordiform lip acute, and somewhat convex in natural position. It resembles *Epidendrum isomerum* Schltr. which has 2-11 x 0.1-0.3 cm leaves, the inflorescence produced from short flowering branches, with a single flower, the flowers green to yellowish green, with very narrow floral segments, sepals 15-16 mm long, the lip rhombic-triangular, acute, with the callus "V" shaped. It is very similar to *Epidendrum guanacastense* Ames & C.Schweinf., which has thicker stems, and a zigzag inflorescence with 2-4 flowers, sepals 8-10 mm long, the lip cordiform, apex rounded, callus "Y" shaped.



CONSERVATION STATUS: DD. Data deficient. Known only from the type.

ETYMOLOGY: in honor of José Daniel Zúñiga Delgado, research assistant at the Jardín Botánico Lankester, who photographed and preserved flowers in alcohol of the cultivated specimen in November 2007, thus permitting its registration.

REFERENCE: Bogarín, D., A. Karremans, & F. Pupulin, 2008. New species and records of Orchidaceae from Costa Rica, **Lankesteriana** 8(2): 53-74.

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